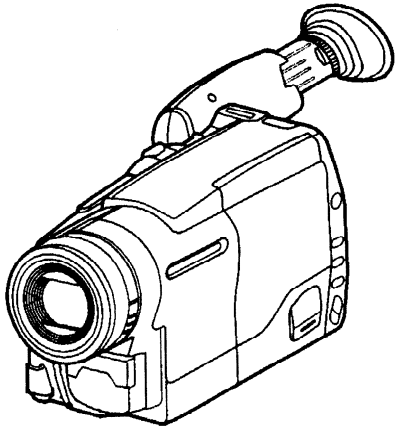
HITACHI

SERVICE MANUAL



TK | No.6905E

VM-E340E(R)/E358E
VM-H650E AC Adapter/Charger VM-ACE4E

TH MECHANISM

This model uses a TH mechanism.
When servicing the TH mechanism, use this manual with the TH Mechanism Service Manual (No. 6406E). This manual includes the new exploded view in Chapter 4. For changed sections from the previous manual (No. 6406E), see Chapter 7 of VM-E330E/H630E/E535LE/E635LE/H835LE Service Manual (No. 6714E).

■ Reference Models
The VM-E340E(R), VM-E358E and VM-H650A are minor change models of the VM-E340E (VM-E330E) and VM-H630E.

■ Reference Service Manual
This manual includes only items that differ from the VM-E330E/H630E/E535LE/E635LE/H835LE Service Manual (No. 6714E,G).
When servicing this model, refer to the VM-E330E/H630E/E535LE/E635LE/H835LE Service Manual (No. 6714E,G), following the contents in this manual.

8
Hi8

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

8mm VIDEO CAMERA/RECORDER

February 1999 AV Consumer Products Division, Tokai

CAUTION

Lithium battery; danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacuturer's instructions.

When replacing the lithium battery it is important to use the same type and connect it correctly.

WARNING:
- Lithium batteries contain dangerous chemicals.
- Handle and dispose of with great care.
- Do not throw in a fire.
- Do not short circuit it.
- For disposal place in a plastic bag and put in waste bin.

CAUTION (CRT EVF)

Be careful of the section painted in white on the electronic viewfinder circuit board as it generates a high voltage.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts have special safety-related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for a higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual. Electrical components having such features are identified by marking with a ⚠ on the schematics and the parts list in this Service Manual. The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards. Product safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies for, HITACHI Service Manual may be obtained at a nominal charge from HITACHI SALES CORPORATION.

X-RAY RADIATION

The primary source of X-ray radiation in this viewfinder is the picture tube. The tube used in this viewfinder is specially constructed to limit X-ray radiation emission. For continued X-ray radiation protection, the replacement tube must be same type as the original, Hitachi approved one.

How to discriminate the "TYPE" identifications in the manual

The parts and circuits are identified by "TYPE" in this manual to discriminate the differences between models. The TYPE numbers are the same as the model numbers. The table below shows how to read the type identifications.

TYPE identification	Model name
TYPE 340	VM-E340E(R)
TYPE 358	VM-E358E
TYPE 650	VM-H650E

ENGLISH

C O N T E N T S

CHAPTER 1 GENERAL INFORMATION

SPECIFICATIONS E1-1
COMPARISON OF FEATURES E1-2
COMPARISON OF MAIN CONTROL ICs E1-3
JIGS AND TAPES FOR ADJUSTMENT E1-4
HOW TO USE THE EXTENSION CABLE E1-5
EXTRACT FROM THE
INSTRUCTION MANUAL E1-6

NOTE
For service manual abbreviation list, leadless (chip) component identification and maintenance/inspection procedure, refer to the VM-E330E/H630E/E535LE/E635LE/H835LE Service Manual (No. 6714E or E,G) .

CHAPTER 2 DISASSEMBLY

NOTE
Refer to the VM-E330E/H630E/E535LE/E635LE/H835LE Service Manual (No. 6714E or E,G) for the "DISASSEMBLY".

CHAPTER 3 ELECTRIC CIRCUIT ADJUSTMENT

NOTE
This manual includes only the differences from the VM-E330E and VM-H630E. For items not included in this manual, refer to the VM-E330E/H630E/E535LE/E635LE/H835LE Service Manual (No. 6714E or E,G).

COMPARISON OF ADJUSTMENT E3-1
(6) Record Luminance Adjustment E3-2

CHAPTER 4 EXPLODED VEWS

1. CABINET SECTION 4-1
2. CHASSIS SECTION 4-2
3. ELECTRONIC VIEWFINDER (EVF) SECTION 4-3
4. CAMERA BLOCK SECTION 4-3
5. ACCESSORIES 4-4

CHAPTER 5 REPLACEMENT PARTS LIST

1. MECHANICAL PARTS LIST 5-1
2. ELECTRICAL PARTS LIST 5-2

CHAPTER 6 SCHEMATIC AND CIRCUIT BOARD AND BLOCK DIAGRAMS/ MICROPROCESSOR PIN FUNCTION TABLES

INTERNAL WIRING DIAGRAM 6-1

SCHEMATIC/CIRCUIT BOARD

SENSOR [SE] ..... 6-2 / 6-28
CAMERA PROCESS [VCA] ..... 6-4 /6-30, 36
SYSTEM CONTROL [VCA] ..... 6-8 /6-30, 36
TROUBLE SENSOR [HTS9551C] ..... 6-10 / 6-29
REAR UNIT ..... 6-11 / -----
SERVO [VCA] ..... 6-12 /6-30, 36
AUDIO [VCA] ..... 6-14 /6-30, 36
Y/CHROMA [VCA] -TYPE 340, 358- ..... 6-18 /6-30, 36
Y/CHROMA [VCA] -TYPE 650- ..... 6-21 /6-30, 36
DC-DC CONVERTER [VCA] ..... 6-24 /6-30, 36
ELECTRONIC VIEWFINDER [EMQ] ..... 6-26 / 6-28

IC BLOCK DIAGRAM 6-17

WAVEFORMS
CAMERA SECTION 6-6
SYSTEM CONTORL SECTION 6-10
VIDEO SECTION 6-16
ELECTRONIC VIEWFINDER SECTION 6-26

BLOCK DIAGRAMS
1. OVERALL 6-38
2. CAMERA 6-40
3. POWER 6-42
4. SYSTEM CONTROL 6-44
5. SERVO 6-46
6. VIDEO 6-48
7. AUDIO 6-50

MICROPROCESSOR PIN FUNCTION TABLE
1. DIGITAL
MICROPROCESSOR (IC1104: D-µP) 6-52
2. SYSTEM CONTROL
MICROPROCESSOR (IC901: S-µP) 6-54

CHAPTER 7 APPENDIX

NOTE
Refer to the VM-E330E/H630E/E535LE/E635LE/H835LE Service Manual (No. 6714E or E,G) for the "APPENDIX".

CHAPTER 8 VM-ACE4E (AC ADAPTER/CHARGER)

EXPLODED VIEW &
REPLACEMENT PARTS LIST 8-1

CHAPTER 1 GENERAL INFORMATION

SPECIFICATIONS

■ General

Power requirements	7.2V DC
Power consumption	VM-E340E(R)/E358E: 4.0 watts (when recording) VM-H650E: 4.3 watts (when recording)
Operating temperature	0°C to 40°C
Operating humidity	< 80%
Storage temperature	-20°C to 60°C
Dimensions	94 (W) x 115 (H) x 238 (D) mm
Weight	Approx. 760g (without battery pack and cassette)

■ Video Recorder Section

Format	8 mm
Record/playback system	Two video record/playback heads
Video signal	PAL colour & CCIR monochrome signals 625 lines
Tape speed	SP: 20.05 mm/sec.
Video output	1.0 Vp-p, 75 ohm
Audio output	-8 dBs, less than 1K ohm
Fast forward/rewind time	Less than 8 minutes with P5-90 cassette

■ Camera Section

Scanning	625 lines/50 fields/25 frames
Required minimum illumination	0.8 lux
Camera device	1/4" C.C.D
Lens	F1.4 - 2.8 (4 - 64 mm) 16:1 power zoom lens with auto focus and auto iris functions
Lens diameter	46 mm

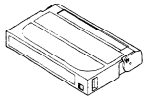
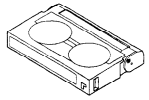
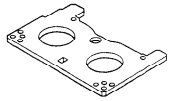
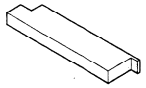
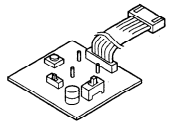
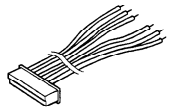
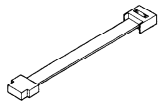
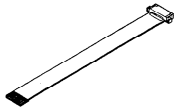
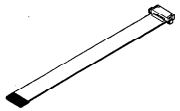
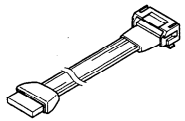
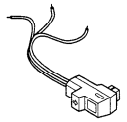
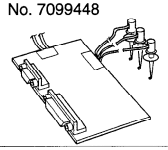
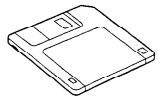
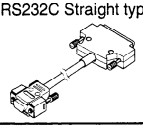
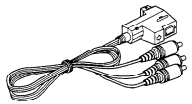
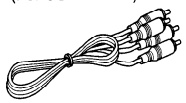
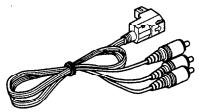
COMPARISON OF FEATURES

	ITEM	VM-E330E/H630E	VM-E340E	VM-E340E(R)/E358E VM-H650E
GENERAL	Power Requirements	7.2V DC		
	Power Consumption	4.3 W [VM-E330E] 4.6 W [VM-H630E]	4.0W	4.0W [VM-E340E(R)/E358E] 4.3W [VM-H650E]
	Dimensions (W × H × D mm)	91 × 115 × 239		94 × 115 × 238
	Weight	Approx. 760 g		
VIDEO	Format	8 mm [VM-E330E] 8 mm (Hi-8) [VM-H630E]	8 mm	8 mm [VM-E340E(R)/E358E] 8 mm (Hi-8) [VM-H650E]
	Record/Playback System	Two video record/playback heads		
	Video Signal	PAL colour & CCIR monochrome		
	Tape Speed	20.05mm/sec		
	F.F/Rew Time	Less than 8 minutes with P5-90 cassette		
	Head Weel	40 mm		
	Basic Chassis Type	TH		
CAMERA	Scanning	625 lines/50 fields/25 frame		
	Required Minimum Illumination	0.8 lux [VM-E330E] 2 lux [VM-H630E]	0.8 lux	
	Camera Device	1/4" C.C.D		
	Lens Diameter	46 mm		
	Zoom Ratio	16 : 1 (4.0 - 64.0mm)		
	Aperture	F1.4 - 2.8		
	Zoom Speed	1 Speed		
FEATURES	Electronic Viewfinder (EVF)	CRT (Black & White)		
	Electrical Zoom Function	× 130 (86 × 1.5)		× 130 (86 × 1.5)
	INST. ZOOM Function	Yes (× 1.5)		
	Autofocus System	Video AF System		
	Program AE (Shutter Speed)	Yes (Programe AE only)		
	Titler	Yes (2 Line/1Page)		
	AV Input Function	No		
	S Output	No [VM-E330E] Yes [VM-H630E]	No	No [VM-E340E(R)/E358E] Yes [VM-H650E]
	Microphone	Monaural [VM-E330E] Stereo [VM-H630E]	Monaural	
	Fade	Yes		
	Date Serch	Yes		
	Electronic Image Stabilizer (E.I.S)	Yes [VM-H630E] No [VM-E330E]	No	
	Manual Focus	Yes (Auto/Manual selective)		
	LCD Display	No		
ACCESSORY	AC Adapter/Charger	VM-ACE3E	VM-ACE4E	
	Battery Pack	VM-BPL13		
	Remote Control	VM-RME311A	VM-RME411A	

COMPARISON OF MAIN CONTROL ICs

	ITEM	VM-E330E/H630E	VM-E340E	VM-E340E(R)/E358E VM-H650E
CAMERA (AUTOFOCUS)	CCD Sensor	ICX207(IC1001) [VM-E330E] ICX211(IC1001) [VM-H630E]	ICX207 (IC1001)	ICX207 (IC1001) [VM-E340E(R)/E358E] ICX209 (IC1001)[VM-H650E]
	Gyro (Vert.)	CG-16DF0 (IC1401)	Not provided	
	Gyro (Horiz.)	CG-16DF1 (IC1402)	Not provided	
	Gyro Amp	NJM062M-TE1 (IC1403)	Not provided	
	Gyro Reset	TC4W66F (IC1404)	Not provided	
	CDS/AGC & A/D Conv.	HD493322F (IC1101)	HD493322BF (IC1101)	
	DSP	HG51CS035TE (IC1102)	HG73C012TE (IC1102)	
	Drive Pulse Generator	µPD16510GR (IC1103)		
	D (Digital) -µP	HD6433042ST-E3 (IC1104)	HD6433042ST36F (IC1104)	
	EEPROM	MX25S67MR (IC1105)	S-29394 (IC1105)	
	F Det./Iris Drive	µPC5023GS-105 (IC1201)	µPC5023GS-147 (IC1201)	
	Zoom /Focus Motor Driver	MPC17A34ZVM (IC1301)		
CRT EVF	Video Amp/Vertical & Horizontal Deflection	HA118121T (IC2001)		
SYSTEM CONTROL (POWER) & SERVO	System/Servo Control µP	CXP87240-117R (IC901)	CXP87240-136R (IC901)	
	Back-up Det	S84233FS (IC902)		
	Character Gen.	BU6229FV (IC904)	BU6294FV (IC904)	
	Level Shift	SN74AHCT126PW (IC905)	Not provided	
	ATF	UPC5023GS-122-E1 (IC601)		
	Cylinder Motor Drive	LB1950V-TLM (IC631)		
	Loading Motor Drive	BA6417F (IC671)		
	Capstan Motor Drive	LB1881 (on the capstan motor)		
	PWM	BA9735KV (IC551)		
VIDEO & AUDIO	VideoHead Switch	HA118189MPER (IC101)		
	Phase EQ/FM Peak	µPC5023GS-101-E1 (IC102)		
	Y/Chroma Process	HA118192AF (IC201)		
	1H Delay	CXL5517N (IC202)		
	CCD 1H Delay	CXL5508M (IC203)		
	Video Amp	µPC5023GS-104-E1 (IC204)		
	Monaural Audio Process	LA7458W (IC401)N		

JIGS AND TAPES FOR ADJUSTMENT

1. Alignment Tape Color Bar/400Hz (20HSC-3) No. 7099232 	**2**. Cassette Torque Meter SRK-8T-232 : No. 7099236 SRK-8T-212 : No. 7099402 	**3**. Master Plane No. 7099237 	**4**. Reel Disk Height Jig No. 7099238 
5. Special Driver No. 7099239	**6**. ATF-R Jig *(*1, *2)* No. 7099461 	**7**. C12 Light Balance Filter 46mm Ø No. 7099369	**8**. 10-Pin Extension Cable No. 7069183 
9. 2-Pin Extension Cable No. 7069038 	**10**.10-Pin Extension Cable No. 7069039 	**11**. 9-Pin Extension Cable No. 7069040 	**12**. 20-Pin Extension Cable No. 7069112 
13. DSP AV Output Jig No. 7099456 	**14**. DSP-R Jig No. 7099448 	**¤15**. Adjustment Floppy Disk No. TP11933 	**§16**. Personal Computer
§17. Personal Computer Cable 9-PIN or 25-PIN (RS232C Straight type) 	**18**. AV INPUT CABLE No. 5860771 	**#19**. AV Output Cable *(*3)* (For US Pin Jack) 	(For 20 Pin AV Jack) 

For marks :

¤: New jigs and tools §: Goods on the Market $: Optional Accessory #: Accessory

Caution for jigs :

**1.* Always set SW3 on the ATF-R jig to ON.

**2.* The ATF jig (No.7099386) can also be used in place of ATF-R jig to adjust this model.

**3.* Either the monaural or stereo AV input/output cable can be used.

**4.* To supply video and audio signals, the AV input cable must be modified. (See next page for how to modify it).

HOW TO USE THE EXTENSION CABLE

NAME OF JIGS	PARTS No.	HOW TO USE
10-Pin Extension Cable	7069183	Cable to power the camera/recorder after the case is removed. [Pin 1 and 2: Positive, Pin 6 and 7: Negative] Power supply cable for power shut off level adjustment. **NOTE**: It it is used for the power shut off level adjustment, short pins 3 and 5 to pins 6 and 7 (GND).
2-Pin Extension Cable	7069038	Installed between the VCA circuit board and loading motor.
10-Pin Extension Cable	7069039	Installed between the VCA circuit board and cylinder. **NOTE**: Using this extension cable causes noise to occur in the playback picture. This cable is used to check voltage and waveforms. Check the picture quality in the regular connection state.
9-Pin Extension Cable	7069040	Installed between the VCA circuit board and capstan motor.
20-Pin Extension Cable	7069112	Installed between the SP and VCA circuit boards.

Procedure to modify the AV input cable

Although models do not have AV input function, you can modify the AV input cable so that video and audio signals can be input. For adjustment and performance check, modify the AV input cable by following the procedure below, to input signals:

Caution 1: Do not modify the AV input cable for purposes other than adjustment or performance check.

Caution 2: Modify the AV input cable correctly. If an improperly modified cabl e is connected to a camcorder, it will result in malfunctions.

Caution 3: Since Hi-8 models have an AV input function, use an unmodified AV i nput cable to input the video and audio signals.

Modify the AV input cable.

Change the connection of pin 13 of the AV input cable from ground to pin 2 (DC5V). (After checking that pin 13 and ground are not connected, connection of pin 13 to pin 2 (DC5V).)

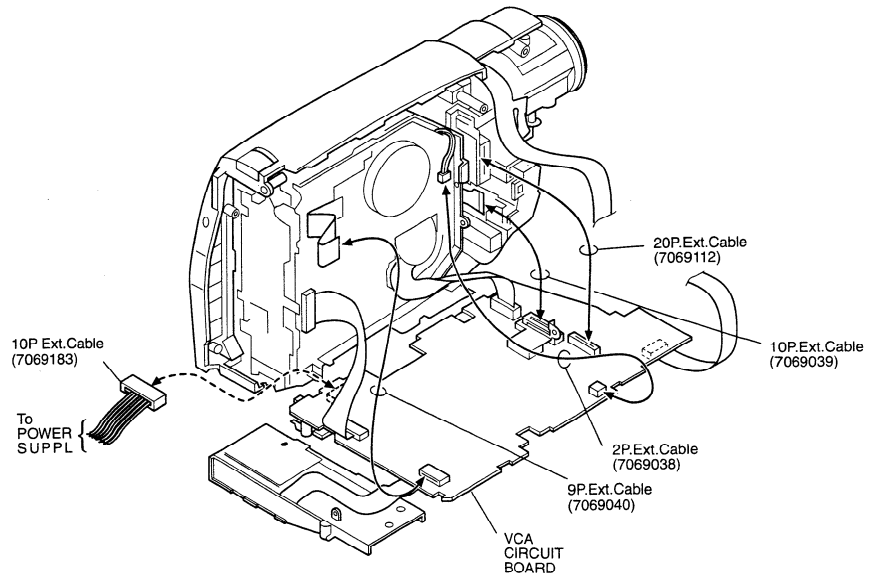
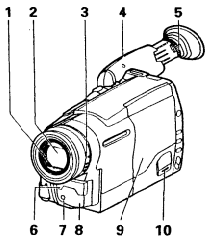
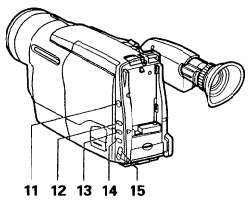


Fig.1-1 Extension Cable Connection Diagram

CONTROLS AND FUNCTIONS





1. Lens Door
Slide the lens door opener to open and close the lens door. To protect the lens, keep the lens door closed when not recording.

2. Lens
F1.4 (4 ~ 64 mm) 16× power zoom lens features with auto focus and auto iris functions.

3. Lens Door Opener
Slide the opener to open and close the lens door. Align with OPEN to open the lens door for recording. Align with CLOSE to close it.
Hold down the small button in the opener as you slide it to CLOSE. However, you need not hold it down to slide the opener to OPEN.

4. Black-and white Electronic Viewfinder

5. Diopter Control
To use the electronic viewfinder, turn this control for your optimum focus adjustment.
NOTE: Pull out the eye cup all the way before adjustment.

6. Microphone
Sensitive to sounds coming from the direction in which the camera is pointed.

7. Record Indicator
This indicator lights up to indicate that the camera/recorder is recording.

8. Infrared Ray Receiving Section
Receives infrared rays from the remote control unit.

9. Cassette Holder
Slide the EJECT switch to open the cassette holder. Be aware of the cassette direction when inserting.
NOTE: Power source must be connected to open the cassette holder.

10. Cassette Holder Close Button
CAUTION: Be sure to press this button to close the cassette holder. Otherwise, the tape may become slack and may be damaged.

11. INST. ZOOM (Instant Zoom) Button
Use this button to magnify the image being recorded 1.5 times momentarily.

12. EFFECTS Button
Use this button to add special effects to your recording. You can select five modes — 16×9 mode, negative/positive mode, ×300 digital zoom mode, half-mirror mode and mosaic mode.

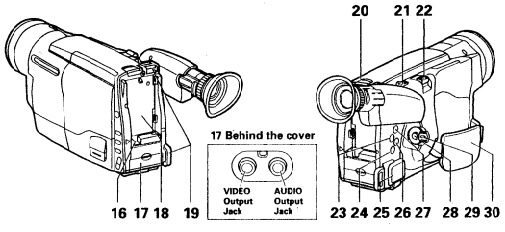
13. FADE Button
During recording you can add a professional touch to your recordings by fading in and out of the scenes. You can select the four face modes — the white fade, wipe fade, zoom fade and black-and-white fade.

14. DATE/DISP. Button
When the CAM/OFF/VIDEO switch is set to CAM, this button can be used as the DATE button; set the date and time, and select the date display you want to record. In the VIDEO mode, the DATE/DISP. button is used as the DISPLAY button.
NOTE: Be sure to insert the clock battery before setting the date and time or creating a title.

15. FOCUS Control Buttons
Press these buttons simultaneously to switch between automatic and manual focusing.
When "FOCUS" is not displayed in the viewfinder, focusing is automatic.
If these buttons are pressed at the same time and "FOCUS" appears, the camera/recorder enters the manual focus mode. For manual focusing, press the ▲ or ▼ button to bring the subject into focus.

16. DC IN Jack
When using the AC adaptor/charger, connect one end of the DC cord (provided) to this jack and the other end to the DC OUT jack of the AC adaptor/charger. When using the car battery cord (optional), connect this jack and the DC OUTPUT jack of the car battery cord.

17. AUDIO/VIDEO Output Jacks (Behind the cover)
You can use the audio/video output cable (provided) to connect this jack to a TV when viewing the playback picture on the TV, etc.
- Connect the yellow plug of the audio/video cable to the yellow jack (VIDEO OUT) and the white plug to the white jack (AUDIO OUT).



18. Power Supply Attachment Section
Attach the battery pack (provided) here.

19. Shoulder Strap Slots
Attach the shoulder strap here.

20. BATTERY EJECT Lever
Releases the battery attached to camera/recorder.

21. EJECT Switch
Operates with the CAM/OFF/VIDEO switch either on or off, if a power source is connected to the camera/recorder.

22. Power Zoom Control
This control performs zooming electrically.
"W": Picture becomes wider gradually.
"T": Picture becomes telescopic gradually.

23. PLAY Button
Used for playback of tape.
NOTE: When the camera/recorder is in record/pause (stand-by) mode, pressing and holding this button will play the tape at normal.

24. STOP Button
The STOP button is used to stop playback, rewind, and fast forward operations. The STOP button has no effect during record operation. Also use STOP button when setting the date/time.

25. Audio/Video Output Jack (Behind the cover)
Connect the provided 20 pin-S cable plug to this jack when connecting the camera/recorder to VCR or TV having an S-VIDEO IN jack. (Refer to page 31.)
Use the RF output adaptor (optional) to connect this jack to a TV to view the pictures played back by the camera/recorder.

26. REW/REVIEW Button
Press this button during stop or fast forward mode, and fast-rewinding starts. Press the button during playback of tape, and the tape is played back in the rewind direction approximately 5 times faster than the normal speed to confirm the recorded contents.
Press PLAY button to return to normal playback mode or press STOP button to stop tape movement. Also use this button to review the last few seconds of the tape you are recording. Use REW/REVIEW button when setting the date/time.
NOTE: You can also visually scan backward when the camera/recorder is in record/pause (stand-by) mode by pressing and holding this button.

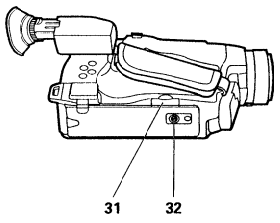
27. F.FWD Button
Press this button during stop or rewind mode, and fast-forwarding starts. Press the button during playback of tape, and the tape is played back in the forward direction approximately 7 times faster than the normal speed to confirm the recorded content.
Press PLAY button to return to normal playback mode or press STOP button to stop tape movement. Also use F.FWD button when setting the date/time.
NOTE: You can also visually scan forward when the camera/recorder is in record/pause (stand-by) mode by pressing and holding this button.

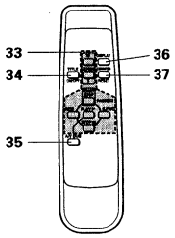
28. Start/Stop Button
This button is used to control the camera/recorder. When this button is pressed with the camera/recorder set to the record/pause mode, the tape runs to start recording.
When this button is pressed again, the tape stops and the camera/recorder enters the record/pause (stand-by) mode. This button may also be used to display a still picture during playback mode.

29. CAM/OFF/VIDEO Switch
This switch turns the camera/recorder on and off. Set the switch to CAM for camera recording, and to VIDEO for playback. Hold down the small red button as you slide the switch to CAM or VIDEO. You do not need to hold down the red button to slide the switch to OFF.

30. Hand Strap
Adjust to best fit to your hand. (Refer to page 7.)

CONTROLS AND FUNCTIONS





31. Clock Battery Compartment
Pull the battery holder and install the lithium battery (provided).

32. Tripod Mount Screw
Use this screw to mount the camera/recorder on a tripod (generally available).

33. Camera/Recorder Control Buttons
These shaded buttons on the remote control function the same as those on the camera/recorder.

34. TITLE ON/OFF Button (only on the remote control)
Use this button to store a title in memory or recall the stored title and record it superimposed on the picture being shot.

35. A/V DUB Button (only on the remote control)
This button is used to record new audio and video in place of existing audio and video.

36. DISPLAY Button
Use this button to select the display in the viewfinder.

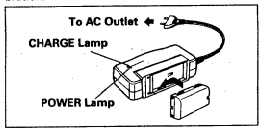
37. COUNTER RESET Button (only on the remote control)
Press this button to reset the linear time counter in the viewfinder to "0:00:00".

CHARGING THE BATTERY

The first step is to set the battery to charge. To charge the battery, use the provided AC adaptor/charger.
Charge the battery at a temperature range of 10°C — 30°C to prevent damage to the battery.

NOTE: This camera/recorder operates with the lithium ion battery such as VM-BPL13/VM-BPL27/VM-BPL30/VM-BPL60.

Charge the battery on a flat surface without vibration.



1. Plug the AC adaptor/charger power cord into an AC outlet. The POWER lamp (rec) lights up.
2. Align the bottom of the battery with mark ▶ on the AC adaptor/charger, and then slide it in the direction of the arrow as shown in the figure.
   The CHARGE lamp (green) lights up.
3. The CHARGE lamp will repeatedly light for 3 seconds and then go off to show that the battery has been charged approximately 70% of full charge. When the CHARGE lamp goes out, the battery has been completely charged. After the lamp goes out, unplug the AC adaptor/charger from the AC outlet and remove the battery from the AC adaptor/charger.

NOTES:
- You can use the battery before it is completely charged.
- Remove the DC cord from the AC adaptor/charger before attempting to charge the battery.
- If you re-attach the fully charged battery to the AC adaptor/charger after the CHARGE lamp goes out, the lamp will light. This simply informs you that the battery has been completely charged; it does not indicate that the charge has been insufficient.

Charging time

Battery pack / Charging	VM-BPL13	VM-BPL27	VM-BPL30	VM-BPL60
Full charge	130 min.	230 min.	260 min.	460 min.
70% charge	70 min.	140 min.	160 min.	320 min.

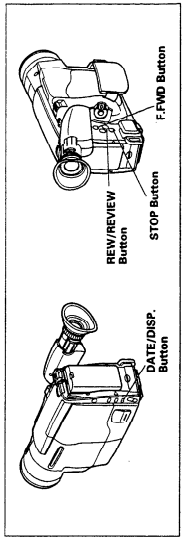
Operating time
The camcorder operating time depends on how often you turn power on/off and use start/stop and zoom.

Battery pack / Recording	VM-BPL13	VM-BPL27	VM-BPL30	VM-BPL60
Continuous recording	120 min.	260 min.	290 min.	500 min.
Typical recording	70 min.	150 min.	170 min.	360 min.

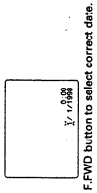
Notes on the battery
- It is recommended that the battery always be left in the discharged state when not in use, and charged before you use it.
- Avoid storing a fully charged battery, and do not store it in a place where the temperature is high; this will damage the battery.
- Do not operate the battery at temperature below –10°C or above 45°C. At extremely low temperatures operation time decreases, while at high temperature the battery may be damaged.
- If the POWER lamp begins to flash during charging, remove the battery and then reattach it to the AC adaptor/charger. If the POWER lamp continues to flash after several attempts to attach it, the battery is unable to take a charge and must be replaced.
- Do not attach a hot battery to the AC adaptor/charger. Allow it to cool.
- There are no user-serviceable parts inside the battery or AC adaptor/charger.
- Throwing the battery into fire or exposing it to excessive heat (above 60°C) may cause injury.
- Shorting the battery's terminal increases risk of fire or electrical shock.

DATE/TIME SETTING

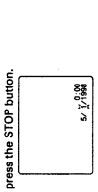
The date and time can be recorded on your tapes to act as a handy reference when viewing them at a later time. Use the following procedure to set up this display for the current date and time.
Make sure that the current time is displayed correctly before you start recording.
NOTE: Be sure to insert the clock battery before setting the date and time. Although the date and time can be set without the clock battery inserted, they will disappear when the battery providing power to the camera/recorder is removed.



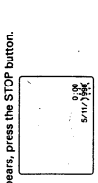
1. Slide the CAM/OFF/VIDEO switch to "CAM".
2. Press the DATE/DISP. button.
   "0:00" and "1/1/1998" appears in the viewfinder and "1" flashes.



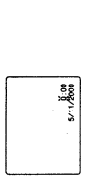
3. Press the F.FWD button to select correct date. Hold button down to advance rapidly. If you go past the date you want to set, press the REW/REVIEW button. When the correct date appears, press the STOP button.



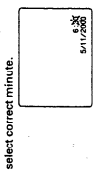
4. Press the F.FWD button to select correct month. Hold button down to advance rapidly. If you go past the month you want to set, press the REW/REVIEW button. When the correct month appears, press the STOP button.



5. Press the F.FWD or REW/REVIEW button to select year, and then press the STOP button.



6. Press the F.FWD or REW/REVIEW button to select correct hour, and then press the STOP button.
7. Press the F.FWD or REW/REVIEW button to select correct minute.



8. After setting to the correct minute, press the DATE/DISP. button to change the display and start the internal clock.
   It is recommended that you press the DATE/DISP. button to match the time signal.
   NOTE: After the date and time are set, "⏲ AUTO" appears and the camera/recorder enters the automatic date recording mode. See "DATE RECORDING" on page 17.

■ **To correct date/time after starting the date/time**

1. Press and hold the DATE/DISP. button, and then press STOP button. The date starts flashing.
2. Correct the incorrect digit by using the F.FWD, REW/REVIEW and STOP buttons.

■ **To correct date/time during programming**

1. Press the STOP button repeatedly until the digit that is incorrect flashes.
2. Correct the incorrect digit by using the F.FWD, REW/REVIEW and STOP buttons.

Other models:

There is no difference in operation method.

	Not included		Included
	VM-E340E(R)	VM-E358E	VM-H650E
System	Normal 8	Normal 8	Hi-8

CHAPTER 3 ELECTRIC CIRCUIT ADJUSTMENT

This manual includes only the differences from the VM-E330E and VM-H630E.
For items not included in this manual, refer to the VM-E330E/H630E/E535LE/E635LE/H835LE Service Manual (No. 6714E).

COMPARISON OF ADJUSTMENT

	ITEM	COMPARISON	NOTE
CAMERA SECTION	Initial Setting by Model	Same as VM-E330E/H630E	
	ELECTRIC VOLUME ADJUSTMENT		
	CDS Sampling Pulse Adjustment	Same as VM-E330E/H630E	
	DIGITAL ADJUSTMENT		
	Auto Iris Control Adjustment	Same as VM-E330E/H630E	
	Matrix Adjustment	Same as VM-E330E/H630E	Refer to Type 330, 630
	White Balance Adjustment	Same as VM-E330E/H630E	Refer to Type 330, 630
	Chroma Gain Adjustment	Same as VM-E330E/H630E	
	AUTOFOCUS ADJUSTMENT		
	Zoom Trace Adjustment	Same as VM-E330E/H630E	
	AF Noise Level Adjustment	Same as VM-E330E/H630E	
	Stabilizer (EIS) Adjutment	Not provided	
	Spot NoiseAdjustment	Same as VM-E330E/H630E	
	ELECTRONIC VIEWFINDER (EVF) ADJUSTMENT		
	Deflection Yoke Position, EVF Centering Adjustment	Same as VM-E330E/H630E	
	EVF Vertical Size Adjustment	Same as VM-E330E/H630E	
	EVF Brightness Adjustment	Same as VM-E330E/H630E	
	EVF Focus Adjustment	Same as VM-E330E/H630E	
	COLOR LCD DISPLAY ADJUTMENT		
	LCD Flicker Adjustment	Not provided	
VCR SECTION	*SYSTEM CONTROL/SERVO CIRCUITS ADJUSTMENT*		
	Power Shut Off Level (ODC: Over Discharge) Adjustment	Same as VM-E330E/H630E	
	Head Switching Point Adjustment	Same as VM-E330E/H630E	
	LUMINANCE/CHORMA CIRCUIT ADJUSTMENT		
	Comb Filter Adjustment	Same as VM-E330E/H630E	
	E-EVideo Siganl Level Adjustment	Same as VM-E330E/H630E	
	White Cilp Adjustment	Same as VM-E330E/H630E	
	Carrier Frequency Adjustment	Same as VM-E330E/H630E	
	Deviation Adjustment	Same as VM-E330E/H630E	
	Record Luminace Adjustment	**Changed**	Chenge of the adjustment value. Refer to page E3-2
	Playback Luminance Adjustment	Same as VM-E330E/H630E	
	Color Alignment Adjutment	Same as VM-E330E/H630E	

(6) Record Luminance Adjustment (Fig. 3-2)

Purpose	· To set the luminance signal to the specified value.		
Incompleted Phenomenon	· The luminance S/Ns diteriorate. · Cross-beats appear on the monitor screen.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Oscilloscope · Color Bar Generater · ATF-R Jig (SW3: ON) · Blank Tape (Nor-8, Hi-8)	· CH-1: Video Out (AV OUT) · CH-2: TP0101 VCA · Video IN (AV IN) · PG0601 VCA	· Input the white (100%) signal · STOP mode	*RT0103 VCA (REC LUMA LEVEL)

<PROCEDURE>

[For Normal 8 Model]

1) Load the blank tape for normal 8.

[For Hi-8 Model]

1) Load the blank tape for Hi-8.

2) Connect the ATF-R jig to PG0601 and turn the power off.

3) Set the camera/recorder to the test mode by the following procedure.

- Procedure to set to the test mode -

1. Remove the power supply from the camera/recorder.
2. Set the CAMERA/OFF/VCR switch to CAMERA position.
3. Check that the ATF-R jig (SW1:OFF, SW3:ON) is connected and then press the playback button and hold it , then supply the power again to the camera/recorder.

4) Set the unit to the loading state.

[For Normal 8 Model]

5) RT0103:
Set the sync tip section in record luminance signal is 550mV ± 5mVp-p.

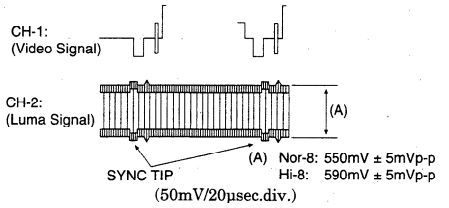
[For Hi- 8 Model]

5) RT0103:
Set the sync tip section in record luminance signal is 590mV ± 5mVp-p.

- Settings of oscilloscope -

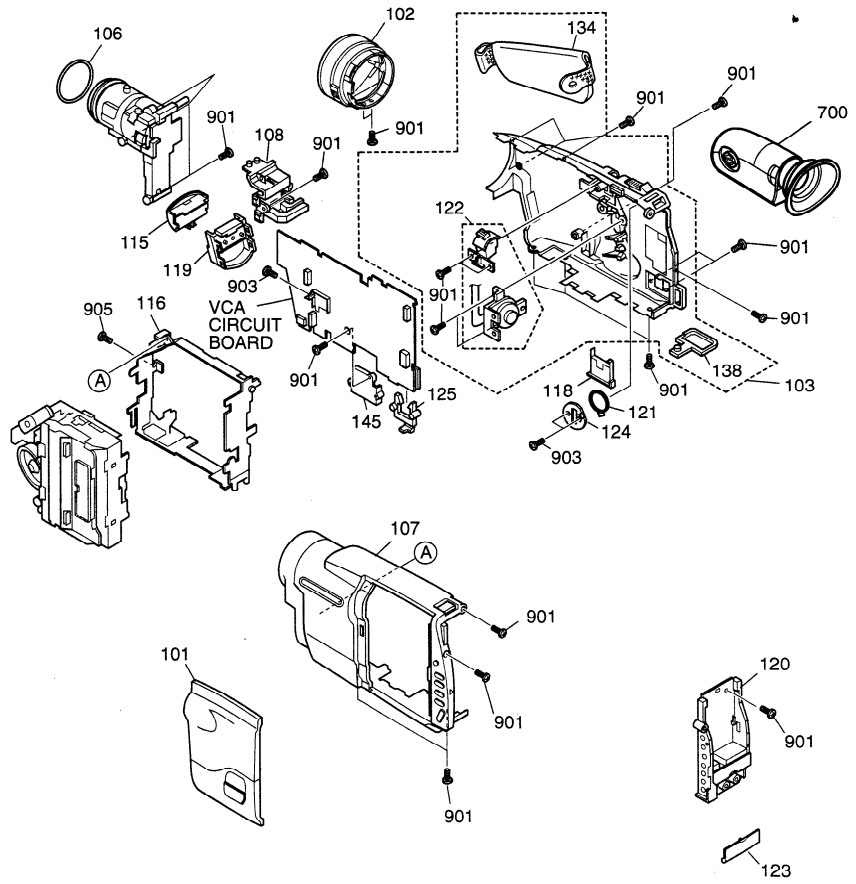
· Trigger with video signal.

- Waveforms -



CHAPTER 4 EXPLODED VIEW

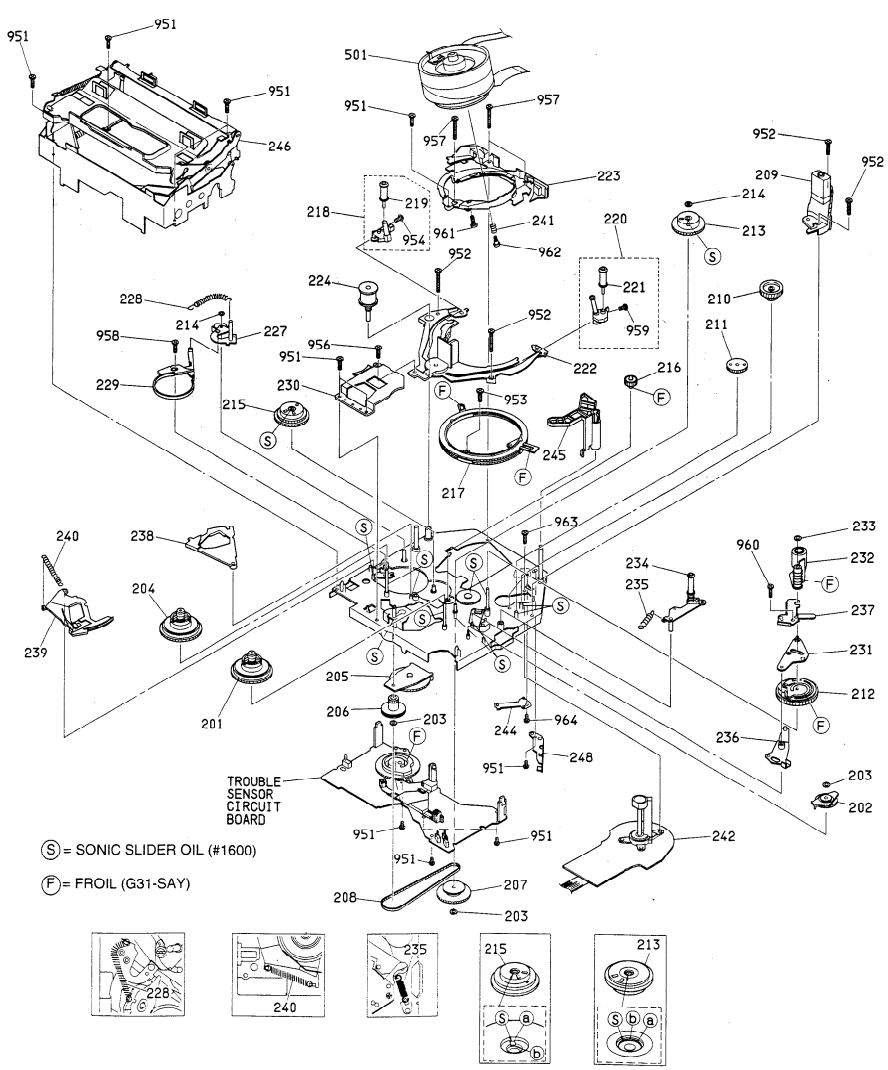
1. CABINET SECTION



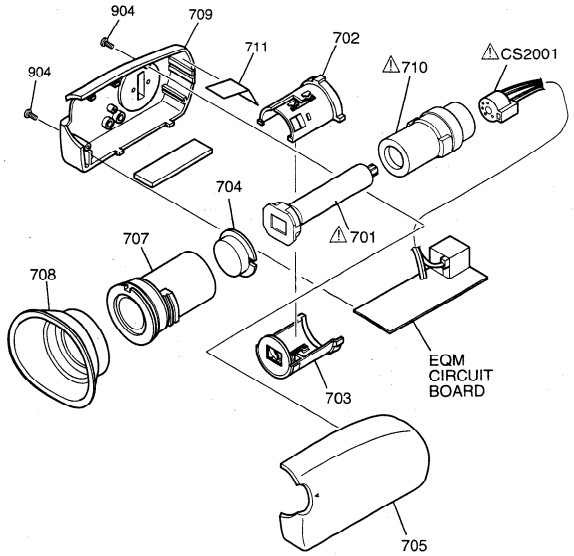
NOTE: The synthetic resin members that can be dismantled are shown by abbreviations using letters.

2. CHASSIS SECTION

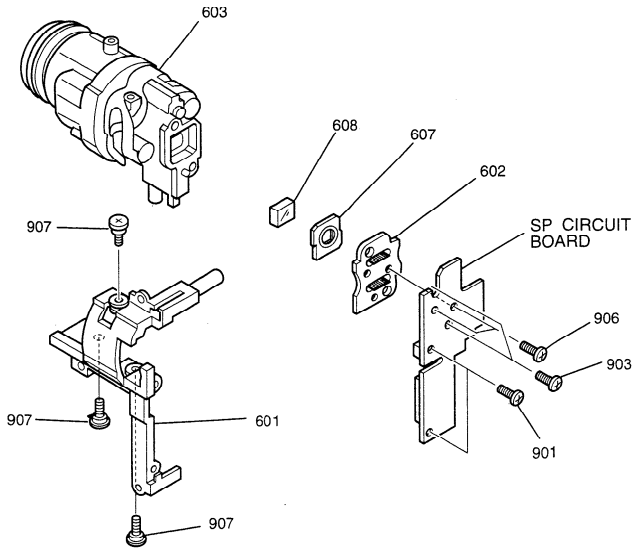
NOTE: If you change the Loading Relay Gears, please use oiler to apply Sonic Slidas oil between (a) to (b). If oil is not applied, Loading Relay Gears will be locked.



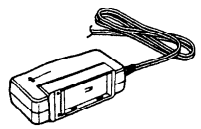
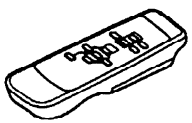
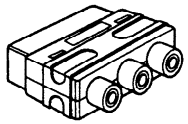
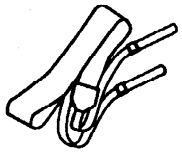
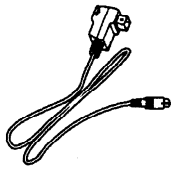
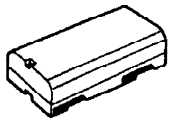
3. ELECTRONIC VIEW FINDER (EVF) SECTION



4. CAMRA BLOCK SECTION



5. ACCESSORIES

⚠ 802  (VM-ACE4E)	803	804	805  (VM-RME411AR)
808 [TYPE 340, 650] 	807 	806 [TYPE 650] 	⚠ Battery  (VM-BPL13)

CHAPTER 5 REPLACEMENT PARTS LIST

1. MECHANICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION	
		MECHANISM SECTION	
101	QD15186	LID, CASSETTE	[TYPE 340]
101	QD17117	LID, CASSETTE	[TYPE 358]
101	QD17119	LID, CASSETTE	[TYPE 650]
102	QD15081	RING, LENS	[TYPE 340, 358]
102	QD15082	RING, LENS	[TYPE 650]
103	FH10353	CASE, SIDE(R)	
106	NX11243	RING, O	
107	QD18009	CASE, SIDE(L)	[TYPE 340]
107	QD18007	CASE, SIDE(L)	[TYPE 358]
107	QD18005	CASE, SIDE(L)	[TYPE 650]
108	NJ11331	HOLDER, IR	
115	GH10291	MICROPHONE, MONORAL	
116	NT10951	FRAME, MECHA	
118	QD15282	CASE, BATTERY	
119	QD15072	FILTER, IR	
120	FH10335	SWITCH, REAR UNIT	
121	4899872	SPRING	
122	FH10371	SWITCH, T/W	
123	QX12792	COVER, JACK	
124	NA15041	STOPPER	
125	NJ11301	HOLDER	
134	PV10241	STRAP, HAND	
138	QX12801	COVER	
145	NX15461	HOLDER, BATTERY	
201	6404062	REEL DISK, TAKE-UP	
202	6406114	GEAR	
203	7787733	WASHER	
204	6404073	REEL DISK, SUPPLY	
205	6401644	GEAR, IDLER	
206	6406211	GEAR	
207	KF11411	GEAR, PULLY	
208	6358471	BELT	
209	KX18142	BLOCK, LOADING	
210	6376312	GEAR, DRIVE	
211	6406082	GEAR	
212	6406242	GEAR	
213	6405834	GEAR (R)	
214	7787731	WASHER	
215	6405824	GEAR (L)	
216	6406131	GEAR	
217	4588464	RING, LOADING	
218	4589354	BAS, GUIDE ROLLER(I)	
219	KX10172	ROLLER, GUIDE	
220	4589366	BASE, GUIDE ROLLER(O)	
221	4588909	ROLLER, GUIDE	
222	4587796	PLATE	
223	KX15651	BASE, CYLINDER	
224	6406158	ROLLER, IMPEDANCE	
227	4589016	ARM, TENSION	
228	6554231	SPRING	
229	4588553	BAND, TENSION	
230	6408832	COVER, IDLER	
231	NA10601	PLATE	
232	4588294	ARM, PRESSURE ROLLER	
233	7787571	WASHER	
234	4588702	ARM	
235	6554201	SPRING	
236	KX10731	LEVER	
237	4588532	SPRING	
238	4588429	PLATE	
239	4588353	BRAKE	
240	6554221	SPRING	
241	6554214	SPRING	
242	GP10681	MOTOR, CAPSTAN	
244	5794021	BRUSH	
245	4588995	COVER	
246	KX10761	CASSETTE HOLDER ASSY	
248	4827262	BRACKET	
501	HX10252	CYLINDER, ASSY (CY-53LN)	[TYPE 340, 358]
501	HX10254	CYLINDER, ASSY (CY-53L3)	[TYPE 650]
601	NT10961	FRAME, LENS	
602	UE13384	CCD IMAGE SENSOR ASSY	[TYPE 340, 358]
602	UE13386	CCD IMAGE SENSOR ASSY	[TYPE 650]
603	KQ10521	LENS, ZOOM	
607	NX11252	RUBBER	
608	DT10141	CRYSTAL	[TYPE 340, 358]
608	DT10151	CRYSTAL	[TYPE 650]
700	UX10591	EVF ASSY	
⚠701	DE10112	CRT	
702	QD16301	CASE, CRT(U)	
703	QD16311	CASE, CRT(B)	
704	4592241	COVER	
705	QD16321	CASE, EVF(R)	
707	QD15415	CASE, SLIDE	
708	QX11991	CAP, EYE	
709	QD16331	CASE, EVF(L)	
⚠710	5242113	DEFLECTION YOKE	
711	4344292	SPACER	
901	7775946	SCREW (2XG)	
903	7775945	SCREW(2X5)	
904	8619003	SCREW 1.7X5	
905	7773891	SCREW	
906	8650103	SCREW(2X3)	
907	MJ10221	SCREW	
951	8712024	PAN HEAD SCREW-1.4MMDX3MM	
952	8700272	SCREW(1.7X5)	
953	7775921	SCREW(1.4X2)	
954	8714004	SCREW(1.4X2.5)	
956	8619065	SCREW(1.7X6)	
957	8700976	SCREW(1.7X8.0)	
958	7770791	SCREW	
959	8712904	SCREW(1.4X2.0)	
960	8619063	SCREW(1.7X3)	
961	8711105	SCREW(2X5)	
962	7785886	SCREW	
963	8700264	1.7X2 SCREW	
964	8741103	SCREW(2X3)	
		ACCESSARIES	
⚠802	TS14503	AC ADAPTOR (VM-ACE4E)	[TYPE 650]
⚠802	TS14505	AC ADAPTOR (VM-ACE4E(AU))	[TYPE 358]
⚠802	TS14504	AC ADAPTOR (VM-ACE4E(UK))	[TYPE 340]
803	EV10511	CORD, PLUG	
804	EW10943	CORD	
805	HL11045	REMOTE HAND SET(VM-RME411AR)	
806	TS12981	AV PLUG ADAPTER	[TYPE 340, 650]
807	TS14621	STRAP, SHOULDER	
808	EW11951	CORD, AV OUTPUT	[TYPE 650]

2. ELECTRICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION
		CAMERA & VCR SECTION
C0101	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0102	0806174	ELECTROLYTIC 100UF 6.3V
C0103	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0104	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0105	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0106	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0108	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0109	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0110	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0111	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0112	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0113	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0114	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0115	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0116	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0117	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0118	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0119	0893119	CERAMIC CHIP 33PF+-5% 50V
C0120	0893122	CERAMIC CHIP 47PF+-5% 50V
C0121	0893121	CERAMIC CHIP 39PF+-5% 50V
C0122	0806174	ELECTROLYTIC 100UF 6.3V
C0130	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0131	0806168	ELECTROLYTIC 47UF 6.3V
C0132	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0133	0893119	CERAMIC CHIP 33PF+-5% 50V
C0134	0893104	CERAMIC CHIP 2.0PF 50V [TYPE 650]
C0134	0893119	CERAMIC CHIP 33PF+-5% 50V [TYPE 358,340]
C0136	0893115	CERAMIC CHIP 15PF+-5% 50V
C0137	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0140	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0141	0893133	CERAMIC CHIP 330PF+-5% 50V
C0142	0893123	CERAMIC CHIP 56PF+-5% 50V
C0143	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0144	0893214	CERAMIC CHIP 2700PF+-10% 50V
C0145	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0146	0893108	CERAMIC CHIP 6.0PF+-0.5% 50V[TYPE 650]
C0146	0893115	CERAMIC CHIP 15PF+-5% 50V[TYPE 358,340]
C0147	0893114	CERAMIC CHIP 12PF+-5% 50V
C0148	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0149	0893117	CERAMIC CHIP 22PF+-5% 50V
C0150	0893114	CERAMIC CHIP 12PF+-5% 50V
C0151	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0153	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0154	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0155	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0156	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0159	0893109	CERAMIC CHIP 7.0PF 50V
C0161	0893108	CERAMIC CHIP 6.0PF+-0.5% 50V
C0162	0893116	CERAMIC CHIP 18PF+-5% 50V
C0164	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0165	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0168	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0169	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0170	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0171	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0172	0806153	ELECTROLYTIC 10UF 16V
C0173	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0174	0806133	ELECTROLYTIC 10UF 6V
C0175	0893106	CERAMIC CHIP 4.0PF+-0.25% 50V
C0176	0893127	CERAMIC CHIP 120PF+-5% 50V
C0177	0893116	CERAMIC CHIP 18PF+-5% 50V
C0178	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0179	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0180	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0181	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0182	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0183	0806153	ELECTROLYTIC 10UF 16V
C0184	0893067	CERAMIC CHIP 0.1UF+80-20% 25V
C0185	0806024	ELECTROLYTIC 3.3UF 6.3V
C0187	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0188	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0189	0893125	CERAMIC CHIP 82PF+-5% 50V
C0190	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0191	0893125	CERAMIC CHIP 82PF+-5% 50V
C0192	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0193	0893125	CERAMIC CHIP 82PF+-5% 50V
C0194	0893106	CERAMIC CHIP 4.0PF+-0.25% 50V
C0195	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0201	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0202	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0203	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0204	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0205	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0206	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0207	0893114	CERAMIC CHIP 12PF+-5% 50V
C0208	0893127	CERAMIC CHIP 120PF+-5% 50V
C0209	0893122	CERAMIC CHIP 47PF+-5% 50V
C0210	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0213	0893102	CERAMIC CHIP 1.0PF+-0.25% 50V
C0214	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0215	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0216	08061/4	ELECTROLYTIC 100UF 6.3V
C0217	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0218	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0219	0806024	ELECTROLYTIC 3.3UF 6.3V
C0221	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0222	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0223	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0224	0893124	CHIP CERAMIC 68PF+-5% 50V
C0225	AA00352R	CERAMIC CHIP 0.33UF+-10% 16V
C0227	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0228	0893059	CERAMIC CHIP 0.47UF+80-20% 16V
C0229	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0230	0893119	CERAMIC CHIP 33PF+-5% 50V
C0231	0806168	ELECTROLYTIC 47UF 6.3V
C0232	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0235	0893123	CERAMIC CHIP 56PF+-5% 50V
C0237	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0238	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0240	0893115	CERAMIC CHIP 15PF+-5% 50V
C0242	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0243	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0244	0806027	ELECTROLYTIC 4.7UF 4V
C0245	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0246	0806133	ELECTROLYTIC 10UF 6V
C0247	0806027	ELECTROLYTIC 4.7UF 4V
C0249	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0250	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0251	0806027	ELECTROLYTIC 4.7UF 4V
C0252	0806027	ELECTROLYTIC 4.7UF 4V
C0253	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0254	0806133	ELECTROLYTIC 10UF 6V
C0255	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0256	0893126	CERAMIC CHIP 100PF+-5% 50V
C0257	0806174	ELECTROLYTIC 100UF 6.3V
C0258	0893059	CERAMIC CHIP 0.47UF+80-20% 16V
C0259	0893225	CERAMIC CHIP 0.1UF+80-20% 16V

SYMBOL NO	P-NO	DESCRIPTION
C0260	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0261	0893117	CERAMIC CHIP 22PF+-5% 50V
C0262	0893109	CERAMIC CHIP 7.0PF 50V
C0263	0893011	CERAMIC CHIP 0.15UF+-10% 16V
C0264	0893116	CERAMIC CHIP 18PF+-5% 50V
C0265	0893134	CERAMIC CHIP 390PF+-5% 50V
C0266	0893127	CERAMIC CHIP 120PF+-5% 50V
C0267	0893124	CHIP CERAMIC 68PF+-5% 50V
C0270	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0271	0806133	ELECTROLYTIC 10UF 6V
C0272	0893115	CERAMIC CHIP 15PF+-5% 50V
C0301	0893126	CERAMIC CHIP 100PF+-5% 50V
C0302	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0303	0806133	ELECTROLYTIC 10UF 6V
C0304	0893126	CERAMIC CHIP 100PF+-5% 50V
C0305	0893134	CERAMIC CHIP 390PF+-5% 50V
C0306	0806113	ELECTROLYTIC 1UF 25V
C0307	0806113	ELECTROLYTIC 1UF 25V
C0308	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0310	0893122	CERAMIC CHIP 47PF+-5% 50V
C0312	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0313	0806153	ELECTROLYTIC 10UF 16V
C0314	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0315	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0316	0806153	ELECTROLYTIC 10UF 16V
C0350	0806133	ELECTROLYTIC 10UF 6V
C0351	0806178	ELECTROLYTIC 220UF 4V
C0352	0806178	ELECTROLYTIC 220UF 4V
C0353	0806133	ELECTROLYTIC 10UF 6V
C0354	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0355	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0356	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0357	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0358	0806168	ELECTROLYTIC 47UF 6.3V
C0359	0806027	ELECTROLYTIC 4.7UF 4V
C0360	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0362	0893124	CHIP CERAMIC 68PF+-5% 50V
C0363	0893126	CERAMIC CHIP 100PF+-5% 50V
C0364	0806153	ELECTROLYTIC 10UF 16V
C0365	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0368	0893131	CERAMIC CHIP 220PF+-5% 50V
C0369	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0391	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0392	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0401M	0806168	ELECTROLYTIC 47UF 6.3V
C0402M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0403M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0404M	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0406M	AD10266R	ELECTROLYTIC 22UF 4V
C0407M	0806163	ELECTROLYTIC 33UF 10V
C0408M	0806027	ELECTROLYTIC 4.7UF 4V
C0409M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0410M	0806027	ELECTROLYTIC 4.7UF 4V
C0411M	AA00693R	CHIP CERAMIC 0.47UF+-10% 16V
C0412M	0806133	ELECTROLYTIC 10UF 6V
C0413M	0806027	ELECTROLYTIC 4.7UF 4V
C0414M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0415M	0893191	CERAMIC CHIP 6800PF+-10% 25V
C0416M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0418M	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0419M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0420M	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0421M	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0422M	0893213	CERAMIC CHIP 2200PF+-10% 50V
C0423M	AA00358R	CHIP CERAMIC 1.0UF+-10% 16V
C0428M	0806168	ELECTROLYTIC 47UF 6.3V
C0429M	0806133	ELECTROLYTIC 10UF 6V
C0430M	AA00358R	CHIP CERAMIC 1.0UF+-10% 16V
C0431M	AA00358R	CHIP CERAMIC 1.0UF+-10% 16V
C0432M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0433M	0806168	ELECTROLYTIC 47UF 6.3V
C0434M	0806027	ELECTROLYTIC 4.7UF 4V
C0435M	0806156	ELECTROLYTIC 22UF 4V
C0436M	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0437M	0893095	CERAMIC CHIP 0.33UF+-10% 16V
C0438M	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0439M	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0440M	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0442M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0444M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0446M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0447M	0806027	ELECTROLYTIC 4.7UF 4V
C0448M	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0501	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0502	0893119	CERAMIC CHIP 33PF+-5% 50V
C0503	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0504	0893119	CERAMIC CHIP 33PF+-5% 50V
C0505	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0507	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0508	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0509	0893126	CERAMIC CHIP 100PF+-5% 50V
C0510	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0511	0893089	CERAMIC CHIP 0.018UF+-10% 16V
C0513	0893227	CERAMIC CHIP 0.22UF+80-20% 16V
C0514	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0516	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0517	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0518	0893129	CERAMIC CHIP 180PF+-5% 50V
C0519	0893133	CERAMIC CHIP 330PF+-5% 50V
C0520	0893129	CERAMIC CHIP 180PF+-5% 50V
C0521	0893133	CERAMIC CHIP 330PF+-5% 50V
C0522	0893129	CERAMIC CHIP 180PF+-5% 50V
C0523	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0524	0893133	CERAMIC CHIP 330PF+-5% 50V
C0525	0893129	CERAMIC CHIP 180PF+-5% 50V
C0527	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0528	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0529	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0535	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0538	0806157	ELECTROLYTIC 22UF 6.3V
C0539	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0540	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0541	AA00335R	CHIP CERAMIC 1.0UF+80-20% 25V
C0542	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0543	AA00335R	CHIP CERAMIC 1.0UF+80-20% 25V
C0544	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0545	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0546	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0547	0806174	ELECTROLYTIC 100UF 6.3V
C0548	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0550	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0551	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0552	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0555	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0556	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0559	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0560	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0601	0893205	CERAMIC CHIP 560PF+-10% 50V
C0602	0806027	ELECTROLYTIC 4.7UF 4V
C0603	0893115	CERAMIC CHIP 15PF+-5% 50V

SYMBOL NO	P-NO	DESCRIPTION
C0604	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0605	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0606	0893204	CERAMIC CHIP 470PF+-10% 50V
C0607	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0608	0893206	CERAMIC CHIP 680PF+-10% 50V
C0609	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0610	0806156	ELECTROLYTIC 22UF 4V
C0611	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0612	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0613	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0614	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0615	0893205	CERAMIC CHIP 560PF+-10% 50V
C0616	0893115	CERAMIC CHIP 15PF+-5% 50V
C0617	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0618	0893207	CERAMIC CHIP 820PF+-10% 50V
C0619	0893177	CAPACITOR 0.068UF+-10% 16V
C0622	0893123	CERAMIC CHIP 56PF+-5% 50V
C0635	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0636	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0637	0893195	CERAMIC CHIP 0.015UF+-10% 25V
C0638	0893195	CERAMIC CHIP 0.015UF+-10% 25V
C0641	0893226	CERAMIC CHIP 0.15UF+80-20% 16V
C0642	0806153	ELECTROLYTIC 10UF 16V
C0643	0806153	ELECTROLYTIC 10UF 16V
C0645	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0647	0893011	CERAMIC CHIP 0.15UF+-10% 16V
C0648	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0649	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0650	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0651	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0652	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0671	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0672	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0673	0893213	CERAMIC CHIP 2200PF+-10% 50V
C0691	0893198	CERAMIC CHIP 0.027UF+-10% 25V
C0692	0893195	CERAMIC CHIP 0.015UF+-10% 25V
C0693	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0694	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0695	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0696	0893191	CERAMIC CHIP 6800PF+-10% 25V
C0902	0806169	ELECTROLYTIC 47UF 16V
C0904	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0905	0806174	ELECTROLYTIC 100UF 6.3V
C0906	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0907	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0908	0806168	ELECTROLYTIC 47UF 6.3V
C0909	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0910	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0911	0893107	CERAMIC CHIP 5PF+-0.25% 50V
C0912	0893107	CERAMIC CHIP 5PF+-0.25% 50V
C0913	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0914	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0915	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0916	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0917	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0918	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0919	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0923	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0924	0893119	CERAMIC CHIP 33PF+-5% 50V
C0925	0893125	CERAMIC CHIP 82PF+-5% 50V
C0928	0893117	CERAMIC CHIP 22PF+-5% 50V
C0929	0893117	CERAMIC CHIP 22PF+-5% 50V
C0930	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0932	0806174	ELECTROLYTIC 100UF 6.3V
C0939	0806168	ELECTROLYTIC 47UF 6.3V
C0942	0806174	ELECTROLYTIC 100UF 6.3V
C0999	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1002	0806169	ELECTROLYTIC 47UF 16V
C1003	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C1004	0893211	CERAMIC CHIP 1500PF+-10% 50V
C1005	0806169	ELECTROLYTIC 47UF 16V
C1006	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1007	0893107	CERAMIC CHIP 5PF+-0.25% 50V[TYPE 650]
C1007	0893113	CERAMIC CHIP 10PF+-0.5% 50V[TYPE 358,340]
C1008	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1009	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1010	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1101	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1102	0806178	ELECTROLYTIC 220UF 4V
C1103	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1104	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1105	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1106	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1107	0893067	CERAMIC CHIP 0.1UF+80-20% 25V
C1108	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1109	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1112	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1113	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1114	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C1115	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1116	0893117	CERAMIC CHIP 22PF+-5% 50V
C1117	0893119	CERAMIC CHIP 33PF+-5% 50V
C1118	0893119	CERAMIC CHIP 33PF+-5% 50V
C1119	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1120	0202319	CERAMIC CHIP 22PF+-2% 50V
C1121	0202321	CHIP CERAMIC 27PF+-2% 50V
C1123	0806173	ELECTROLYTIC 100UF 4V
C1125	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1126	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1127	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1128	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1129	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1130	0893067	CERAMIC CHIP 0.1UF+80-20% 25V
C1131	0893114	CERAMIC CHIP 12PF+-5% 50V
C1132	0806168	ELECTROLYTIC 47UF 6.3V
C1135	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1136	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1139	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1141	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1142	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1143	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1144	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1145	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1146	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1147	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1150	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C1151	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1155	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1156	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1159	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1160	0893208	CERAMIC CHIP 1000PF+-10% 50V
C1161	0806168	ELECTROLYTIC 47UF 6.3V
C1163	0893119	CERAMIC CHIP 33PF+-5% 50V
C1166	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1167	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1169	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1171	0893104	CERAMIC CHIP 2.0PF 50V
C1172	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1173	AA00412R	CERAMIC CHIP 10UF+80-20% 16V
C1201	0893193	CERAMIC CHIP 0.01UF+-10% 25V

SYMBOL NO	P-NO	DESCRIPTION
C1202	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1203	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1204	0893132	CERAMIC CHIP 270PF+-5% 50V
C1205	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1206	0893007	CERAMIC CHIP 0.082UF+-10% 16V
C1207	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C1208	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C1209	0893133	CERAMIC CHIP 330PF+-5% 50V
C1210	0893133	CERAMIC CHIP 330PF+-5% 50V
C1211	0893133	CERAMIC CHIP 330PF+-5% 50V
C1212	0893067	CERAMIC CHIP 0.1UF+80-20% 25V
C1213	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1301	0806186	ELECTROLYTIC 220UF 6.3V
C1302	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1303	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1304	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1305	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1311	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1314	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
R0002	0103882	JUMPER CHIP RESISTOR
R0003	0103972	CHIP JAMPER
R0004	0103972	CHIP JAMPER
R0005	0103972	CHIP JAMPER
R0010	0103930	CHIP RESISTOR 390OHM+-5% 1/8W
R0011	0103838	RESISTOR CHIP 390OHM+-5% 0.1W
R0101	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0102	0790007	CHIP RESISTOR 5.6 OHM+-5% 1/16W
R0103	0790007	CHIP RESISTOR 5.6 OHM+-5% 1/16W
R0104	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0105	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0106	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0107	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0108	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0109	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0110	0790076	CHIP RESISTOR 820KOHM+-5% 1/16W
R0111	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0112	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0113	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0114	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0115	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0116	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0119	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0120	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0121	0790008	CHIP RESISTOR 6.8 OHM+-5% 1/16W
R0122	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0123	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0124	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0125	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R0126	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0127	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0128	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0129	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0130	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0132	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0133	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0134	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0137	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0138	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W[TYPE 650]
R0138	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W [TYPE 358,340]
R0141	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
R0142	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0143	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W [TYPE 358,340]
R0143	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W[TYPE 650]
R0144	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0145	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0146	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W[TYPE 650]
R0146	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W [TYPE 358,340]
R0147	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R0148	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0149	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0150	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0151	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0152	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0153	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0154	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0156	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0157	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0158	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0159	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0160	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W [TYPE 358,340]
R0160	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W[TYPE 650]
R0161	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0162	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0163	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0164	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0165	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0167	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0168	0790065	CHIP RESISTOR 120KOHM+-5% 1/16W
R0170	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0171	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R0172	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R0173	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0174	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0175	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0176	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W[TYPE 650]
R0176	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W [TYPE 358,340]
R0179	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
R0180	0790025	CHIP RESISTOR 120 OHM+-5% 1/16W
R0181	0790063	CHIP RESISTOR 82KOHM+-5% 1/16W
R0182	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0183	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W [TYPE 358,340]
R0183	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W[TYPE 650]
R0184	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0185	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0186	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0187	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0188	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0190	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0191	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0192	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W
R0193	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0194	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0196	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0198	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0199	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0201	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0202	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0203	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0205	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0207	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0208	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W [TYPE 358,340]
R0208	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W[TYPE 650]
R0209	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0212	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0213	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0215	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0216	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0217	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0218	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0219	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0222	0790072	CHIP RESISTOR 390KOHM+-5% 1/16W
R0223	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0224	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0228	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R0230	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0231	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0237	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0238	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0239	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0240	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0241	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0243	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R0244	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0245	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0246	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0247	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0248	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0250	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0251	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0252	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0253	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0254	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0255	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0257	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0258	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0259	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0260	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0261	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0265	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0267	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W[TYPE 650]
R0267	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W [TYPE 358,340]
R0268	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0270	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0271	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0272	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0273	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0274	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0275	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0276	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0278	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0280	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0281	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0292	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0293	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0294	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0295	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R0296	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0298	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0299	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0302	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0303	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0305	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0310	A000221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0311	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0313	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0314	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0316	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0317	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0318	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W
R0319	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0324	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0325	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0326	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0327	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0328	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0330	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0333	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0334	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0335	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0339	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0340	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0350	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0351	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0355	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0356	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0357	A000203R	CHIP RESISTOR 2.2KOHM+-1% 1/16W
R0359	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0364	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0366	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0371	0790066	CHIP RESISTOR 150KOHM+-5% 1/16W
R0373	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0374	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0382	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0383	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0384	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0390	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0391	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0394	0893193	CERAMIC CHIP 0.01UF+-10% 25V
R0397	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0399	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0401M	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0402M	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0405M	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0410M	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0412M	0790069	CHIP RESISTOR 0.27MOHM+-5% 1/16W
R0414M	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0417M	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0419M	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0420M	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0421M	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0422M	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R0423M	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R0424M	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0425M	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0426M	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0427M	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0429M	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0430M	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0431M	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0432M	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0436M	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0437M	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0441M	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0443M	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0459M	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0463M	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0501	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0502	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0504	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0505	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0506	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0507	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0508	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0510	0104269	CHIP RESISTOR 43KOHM+-1% 1/10W
R0511	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0512	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0513	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0514	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0516	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0517	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0518	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0519	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0522	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0525	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0529	A000211R	CHIP RESISTOR 4.3KOHM+-1% 1/16W
R0530	0893039	CERAMIC CHIP 4700PF+-10% 50V
R0531	0104292	CHIP RESISTOR 1.0KOHM+-0.5% 1/16W
R0532	0104301	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0538	0893208	CERAMIC CHIP 1000PF+-10% 50V
R0539	0104297	CHIP RESISTOR 10KOHM+-0.5% 16V
R0540	0104292	CHIP RESISTOR 1.0KOHM+-0.5% 1/16W
R0541	0104301	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0549	0790076	CHIP RESISTOR 820KOHM+-5% 1/16W
R0550	AQ10274R	CHIP RESISTOR 46.4KOHM+-0.5% 1/16W
R0551	AQ10273R	CHIP RESISTOR 680 OHM+-0.5% 1/16W
R0552	0104301	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0555	0790067	CHIP RESISTOR 180KOHM+-5% 1/16W
R0556	0104303	CHIP RESISTOR 12KOHM+-0.5% 1/16W
R0558	0104301	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0561	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0562	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0566	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0567	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0583	0790023	CHIP RESISTOR 82 OHM+-5% 1/16W
R0601	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0602	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0603	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0606	A000223R	CHIP RESISTOR 12KOHM+-1% 1/16W
R0607	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0608	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0609	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0610	A000223R	CHIP RESISTOR 12KOHM+-1% 1/16W
R0611	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0612	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0613	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0614	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0616	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0619	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0620	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0621	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0622	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0623	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0624	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0628	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0640	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0641	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0642	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0643	0105815	CHIP RESISTOR 0.47 OHM+-10% 1/4W
R0644	0105815	CHIP RESISTOR 0.47 OHM+-10% 1/4W
R0662	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0663	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0671	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0672	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0681	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0682	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0691	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0692	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0693	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0694	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0695	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0696	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0701	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0702	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0704	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0706	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0707	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0708	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0721	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0722	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0723	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0724	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0725	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0728	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0729	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0739	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0740	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R0741	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0743	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0744	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0746	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0751	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0752	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0901	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0903	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R0904	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0905	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0906	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0907	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0908	0790066	CHIP RESISTOR 150KOHM+-5% 1/16W
R0909	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R0912	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0913	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0914	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0915	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0916	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0917	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0918	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0919	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0920	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0921	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0922	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0923	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0924	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0925	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0926	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0927	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0928	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0929	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0930	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0931	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0932	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0933	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0934	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0935	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0938	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0941	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0942	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0943	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0944	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0945	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0947	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0948	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0949	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0950	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0951	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0952	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0953	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0954	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0955	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0957	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0958	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0961	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0962	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0963	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R0964	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0966	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0969	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0971	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R0972	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0974	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0975	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0976	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0977	0790017	CHIP RESISTOR 33 OHM+-5% 1/16W
R0978	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0979	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0980	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0981	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0982	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0983	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0984	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0985	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0992	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0994	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0995	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0996	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0998	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0999	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1001	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1002	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1003	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1006	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1009	0103823	CHIP RESISTOR 220HM+-5% 0.1W
D1002	CC10291R	DIODE 1SS353
R1101	AQ00231R	CHIP RESISTOR 24KOHM+-1% 1/16W
R1102	BM00135R	COIL
R1112	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1113	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R1114	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R1115	0790012	CHIP RESISTOR 12 OHM+-5% 1/16
R1116	0790012	CHIP RESISTOR 12 OHM+-5% 1/16
R1117	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1120	0790011	CHIP RESISTOR 10 OHM+-5% 1/16W
R1121	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R1122	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1123	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
R1124	AQ00213R	CHIP RESISTOR 5.1KOHM+-1% 1/16W
R1126	AQ00217R	CHIP RESISTER 7.5KOHM+-1% 1/16W
R1127	AQ00249R	CHIP RESISTOR 120KOHM+-1% 1/16W
R1128	0790036	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R1129	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1130	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1131	0104545	CHIP RESISTOR 1.24KOHM+-1% 1/16W
R1132	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R1133	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1136	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R1137	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1141	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R1142	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R1143	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1145	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1146	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1147	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R1148	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R1149	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1150	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1155	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1156	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1157	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1158	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1159	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1160	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1161	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R1162	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R1163	0790063	CHIP RESISTOR 82KOHM+-5% 1/16W
R1175	AQ00194R	CHIP RESISTOR 1.0KOHM+-1% 1/16W
R1201	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R1202	0790069	CHIP RESISTOR 0.27MOHM+-5% 1/16W
R1203	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1204	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1205	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1206	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1207	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1208	0790071	CHIP RESISTOR 330KOHM+-5% 1/16W
R1209	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R1210	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1211	0790071	CHIP RESISTOR 330KOHM+-5% 1/16W
R1212	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R1213	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1214	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1215	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1216	AQ00231R	CHIP RESISTOR 24KOHM+-1% 1/16W
R1218	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1220	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
R1221	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1222	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1223	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1224	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1225	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1303	AQ00223R	CHIP RESISTOR 12KOHM+-1% 1/16W
R1308	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1309	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1310	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1311	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1312	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R1313	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R1314	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1315	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
RT0103	0104148	CHIP RESITOR 220 OHM+-10% 1/8W
RT0202	0104167	CHIP RESISTOR 5.6KOHM+-10% 1/8W
RT0203	0104171	CHIP RESISTOR 10KOHM+-10% 1/8W
RT0204	0104171	CHIP RESISTOR 10KOHM+-10% 1/8W
RT0205	0104163	CHIP RESISTOR 2.7KOHM+-10% 1/8W
RT0206	0104159	CHIP RESISTER 1.5KOHM+-10% 1/8W
RT0207	0104163	CHIP RESISTOR 2.7KOHM+-10% 1/8W
RT0209	0104166	METAL FILM 4.7KOHM+-10% 1/8W
RT0210	0104144	CHIP RESISTOR 100 OHM+-10% 1/8W
RT0211	0104159	CHIP RESISTER 1.5KOHM+-10% 1/8W
RT0212	0104155	CHIP RESISTER 680 OHM+-10% 1/8W
RT0214	0104163	CHIP RESISTOR 2.7KOHM+-10% 1/8W
RT0215	0104166	METAL FILM 4.7KOHM+-10% 1/8W
RT0216	0104167	CHIP RESISTOR 5.6KOHM+-10% 1/8W
RT0217	0104166	METAL FILM 4.7KOHM+-10% 1/8W

SYMBOL NO	P-NO	DESCRIPTION
RT0302	0104149	CHIP RESISTOR 270 OHM+-10% 1/8W
D0001	CH10451	DIODE
D0101	5337422	DIODE DA221
D0102	5337351	DIODE MA132WK
D0201	5337351	DIODE MA132WK
D0301	5337352	DIODE MA132WA
D0302	5337351	DIODE MA132WK
D0303	CC10291R	DIODE 1SS353
D0305	5337351	DIODE MA132WK
D0352	5337351	DIODE MA132WK
D0394	5337422	DIODE DA221
D0401M	5337422	DIODE DA221
D0406M	CC10291R	DIODE 1SS353
D0551	5337372	DIODE SB07-03C
D0552	CC10291R	DIODE 1SS353
D0553	CC10291R	DIODE 1SS353
D0601	CC10291R	DIODE 1SS353
D0901	CC10291R	DIODE 1SS353
D0902	CC10291R	DIODE 1SS353
D1101	5328305	DIODE MA151WA
D1103	5328305	DIODE MA151WA
D1104	CC10771R	DIODE SML-010LT
D1301	5337422	DIODE DA221
IC0101	1366631	IC HA118189MP
IC0102	CK13461R	IC UPC5023GS-101-E1
IC0201	1366923	IC HA118192AF
IC0202	CK12051R	IC CXL5517N
IC0203	1359591	IC CXL5508M-T3
IC0204	CK13471R	IC UPC5023GS-104-E1
IC0301	CK16781R	IC CXA2003N
IC0401	CK20272R	IC LA7458W
IC0551	CK16251U	IC BA9735KV
IC0601	CK18321R	IC UPC5023GS-122-E1
IC0631	CK18331R	IC LB1950V-TRM
IC0671	1366651	IC BA6417F
IC0901	CK18312U	IC CXP87240-136R
IC0902	CK18271R	IC S84233FS-T2
IC0904	CK18263R	IC BU6294AFV
IC0907	CE10171R	MODULE GP1U101X
IC1101	CK18722U	IC HD49322BF
IC1102	CK20631U	IC HG73C012TE
IC1103	CK12061R	IC UPD16510GR
IC1104	CK21151U	IC HD6433042ST36F
IC1105	CK14172R	IC S29394AFJA
IC1106	CK20601R	IC MM1320UN2V0
IC1201	CK20621R	IC UPC5023GS-147-GJG
IC1301	CK18711R	IC MPC17A34ZVM
Q0001	1322341	TRANSISTOR PT4810F
Q0002	5327521	PHOTO TRANSISTOR SPI-315-C
Q0003	5327521	PHOTO TRANSISTOR SPI-315-C
Q0004	1322341	TRANSISTOR PT4810F
Q0101	1323301	TRANSISTOR 2SB1219
Q0102	1323294	TRANSISTOR 2SA1774RS
Q0103	1323294	TRANSISTOR 2SA1774RS
Q0104	1323279	TRANSISTOR DTC114YE
Q0105	1323301	TRANSISTOR 2SB1219
Q0106	1323279	TRANSISTOR DTC114YE
Q0107	1323294	TRANSISTOR 2SA1774RS
Q0108	1323279	TRANSISTOR DTC114YE
Q0109	1323294	TRANSISTOR 2SA1774RS
Q0110	5328966	TRANSISTOR 2SA1037K-FST
Q0111	1323283	TRANSISTOR UMH1N
Q0112	1323291	TRANSISTOR 2SC4617
Q0116	1323279	TRANSISTOR DTC114YE
Q0117	1323279	TRANSISTOR DTC114YE

SYMBOL NO	P-NO	DESCRIPTION
Q0120	1323301	TRANSISTOR 2SB1219
Q0121	1323291	TRANSISTOR 2SC4617
Q0122	1323279	TRANSISTOR DTC114YE
Q0123	1323291	TRANSISTOR 2SC4617
Q0130	1323279	TRANSISTOR DTC114YE
Q0131	1323279	TRANSISTOR DTC114YE
Q0140	1323241	TRANSISTOR XP1213
Q0170	1323301	TRANSISTOR 2SB1219
Q0171	1323253	TRANSISTOR XP4401
Q0173	1323253	TRANSISTOR XP4401
Q0175	1323291	TRANSISTOR 2SC4617
Q0176	1323294	TRANSISTOR 2SA1774RS
Q0178	1323291	TRANSISTOR 2SC4617
Q0179	1323294	TRANSISTOR 2SA1774RS
Q0201	1323241	TRANSISTOR XP1213
Q0202	1323279	TRANSISTOR DTC114YE
Q0203	1323241	TRANSISTOR XP1213
Q0204	1323291	TRANSISTOR 2SC4617
Q0206	1323253	TRANSISTOR XP4401
Q0208	1323241	TRANSISTOR XP1213
Q0209	1323241	TRANSISTOR XP1213
Q0210	1323291	TRANSISTOR 2SC4617
Q0211	1323291	TRANSISTOR 2SC4617
Q0212	1323279	TRANSISTOR DTC114YE
Q0213	1323278	TRANSISTOR DTA114YE
Q0215	1323279	TRANSISTOR DTC114YE
Q0216	1323279	TRANSISTOR DTC114YE
Q0217	1323279	TRANSISTOR DTC114YE
Q0219	1323241	TRANSISTOR XP1213
Q0221	1323241	TRANSISTOR XP1213
Q0224	1323283	TRANSISTOR UMH1N
Q0225	1323294	TRANSISTOR 2SA1774RS
Q0226	1323279	TRANSISTOR DTC114YE
Q0228	1323279	TRANSISTOR DTC114YE
Q0229	1323241	TRANSISTOR XP1213
Q0231	1323279	TRANSISTOR DTC114YE
Q0232	1323294	TRANSISTOR 2SA1774RS
Q0233	1323294	TRANSISTOR 2SA1774RS
Q0301	1323301	TRANSISTOR 2SB1219
Q0302	1323279	TRANSISTOR DTC114YE
Q0303	1323291	TRANSISTOR 2SC4617
Q0305	1323279	TRANSISTOR DTC114YE
Q0306	1323278	TRANSISTOR DTA114YE
Q0307	1323291	TRANSISTOR 2SC4617
Q0308	1323279	TRANSISTOR DTC114YE
Q0309	1323294	TRANSISTOR 2SA1774RS
Q0350	1323291	TRANSISTOR 2SC4617
Q0352	1323294	TRANSISTOR 2SA1774RS
Q0356	1323291	TRANSISTOR 2SC4617
Q0357	1323279	TRANSISTOR DTC114YE
Q0358	1323291	TRANSISTOR 2SC4617
Q0360	1323279	TRANSISTOR DTC114YE
Q0361	1323278	TRANSISTOR DTA114YE
Q0362	1323279	TRANSISTOR DTC114YE
Q0363	1323279	TRANSISTOR DTC114YE
Q0364	1323279	TRANSISTOR DTC114YE
Q0365	1323279	TRANSISTOR DTC114YE
Q0366	1323278	TRANSISTOR DTA114YE
Q0367	1323278	TRANSISTOR DTA114YE
Q0368	1323279	TRANSISTOR DTC114YE
Q0401M	1323291	TRANSISTOR 2SC4617
Q0402M	1323291	TRANSISTOR 2SC4617
Q0403M	1323278	TRANSISTOR DTA114YE
Q0405M	1323294	TRANSISTOR 2SA1774RS
Q0551	1308011	TRANSISTOR MPL1

SYMBOL NO	P-NO	DESCRIPTION
Q0553	CA10271R	TRANSISTOR 2SB1424
Q0557	CA10271R	TRANSISTOR 2SB1424
Q0558	1323291	TRANSISTOR 2SC4617
Q0559	1308011	TRANSISTOR MPL1
Q0561	1308011	TRANSISTOR MPL1
Q0562	1308011	TRANSISTOR MPL1
Q0601	1323278	TRANSISTOR DTA114YE
Q0602	1323291	TRANSISTOR 2SC4617
Q0603	1323291	TRANSISTOR 2SC4617
Q0604	1323291	TRANSISTOR 2SC4617
Q0901	1323294	TRANSISTOR 2SA1774RS
Q0902	1323291	TRANSISTOR 2SC4617
Q0903	1323278	TRANSISTOR DTA114YE
Q0904	1323294	TRANSISTOR 2SA1774RS
Q0905	5328975	TRANSISTOR 2SC2412K
Q0907	1323279	TRANSISTOR DTC114YE
Q0909	1323279	TRANSISTOR DTC114YE
Q1001	5328221	TRANSISTOR 2SC2620-QC
Q1101	5328966	TRANSISTOR 2SA1037K-FST
Q1102	5328975	TRANSISTOR 2SC2412K
Q1103	5328966	TRANSISTOR 2SA1037K-FST
Q1108	1323279	TRANSISTOR DTC114YE
Q1201	5328975	TRANSISTOR 2SC2412K
Q1202	5328975	TRANSISTOR 2SC2412K
Q1203	1323141	TRANSISTOR 2SC2411K
T0551	5148333	TRANSFORMAR,POWER
L0101	0773001	CHOCE COIL 10UH+-10%
L0102	0773004	COIL 100UH
L0103	0773124	CHOKE COIL 27UH+-5%
L0104	0773001	CHOCE COIL 10UH+-10%
L0105	0773117	CHOKE COIL 8.2UH+-5%
L0107	RA10315R	COIL 150UH
L0108	0773135	CHOKE COIL 180UH+-5%
L0109	BA10318R	COIL 470UH
L0110	0773124	CHOKE COIL 27UH+-5%
L0110	BA10309R	COIL 22UH
L0111	BA10317R	COIL 330UH
L0112	BA10308R	COIL 15UH
L0170	0773001	CHOCE COIL 10UH+-10%
L0171	0773001	CHOCE COIL 10UH+-10%
L0172	BA10313R	COIL 68UH
L0173	BA10308R	COIL 15UH
L0201	0773124	CHOKE COIL 27UH+-5%
L0202	0773013	COIL 8.2KUH
L0203	BA10307R	COIL 10UH
L0204	0773133	CHOKE COIL 120UH+-5%
L0205	0773003	COIL 47UH
L0206	0773003	COIL 47UH
L0207	0773131	CHOKE COIL 82UH+-5%
L0301	0773001	CHOCE COIL 10UH+-10%
L0350	0773003	COIL 47UH
L0401M	0773003	COIL 47UH
L0403M	0773003	COIL 47UH
L0551	BA10127R	COIL 10UH
L0552	BA10128R	COIL 22UH
L0554	BA10128R	COIL 22UH
L0556	BA1012/R	COIL 10UH
L0559	0773004	COIL 100UH
L0560	0773004	COIL 100UH
L0561	BA10129R	COIL 47UH
L0563	BA10127R	COIL 10UH
L0564	BA10129R	COIL 47UH
L0565	BA10129R	COIL 47UH
L0566	0773001	CHOCE COIL 10UH+-10%
L0601	0773002	COIL 22UH

SYMBOL NO	P-NO	DESCRIPTION
L0902	BA10308R	COIL 15UH
L0903	0773002	COIL 22UH
L0904	0773001	CHOCE COIL 10UH+-10%
L0906	0773002	COIL 22UH
L0908	0773003	COIL 47UH
L1101	0773003	COIL 47UH
L1102	0773001	CHOCE COIL 10UH+-10%
L1103	BA10314R	COIL 100UH
L1104	0773003	COIL 47UH
L1105	0773001	CHOCE COIL 10UH+-10%
L1106	0773001	CHOCE COIL 10UH+-10%
L1109	0773005	COIL 220UH
L1301	0773002	COIL 22UH
X0201	BL10822R	CRYSTAL
X0901	BL10572R	CRYSTAL
X0902	BL10311R	CRYSTAL
X1101	BL10932R	CRYSTAL
CP0202	BE10232R	COIL 12.2MH
CP0203	BE10342R	FILTER,BAND PASS
CP0204	BE10345R	FILTER,BAND PASS
CP0205	5172734	DELAY LINE
CP0206	5172735	FILTER,LOW PASS
CP1101	BE10411R	FILTER,LOW PASS[TYPE 358,340]
CP1101	BE10412R	FILTER,LOW PASS[TYPE 650]
⚠F0551	FM10132R	FUSE 1.6A
⚠F0552	FM10134R	FUSE 125V
JK0200	5695292	JACK
PG0001	EA11061R	PLUG
PG0101	EA10501R	PLUG
PG0401L	5668671	MINI PLUG
PG0551	5669175	PLUG
PG0601	5692362	MINI PLUG
PG0602	EA10641R	PLUG
PG0603	EA10501R	PLUG
PG0604	5668671	MINI PLUG
PG0901	EA10651R	PLUG
PG0902	5668754	PLUG
PG0903	5669193	MINI PLUG
PG1001	1830344	PLUG
PG1101	1830343	PLUG
PG1103	1830355	PLUG
PG1301	EA10377R	PLUG
S0003	5636171	SWITCH
S0004	5636171	SWITCH
S0005	5636171	SWITCH
S0006	5635331	SWITCH
S0007	5613523	SWITCH
SW0902	1742011	SWITCH
SW0903	1742011	SWITCH
SW0904	1742011	SWITCH
SW0905	1742011	SWITCH
SW0906	FB10201R	SWITCH

EVF SECTION

C2001	0806169	ELECTROLYTIC 47UF 16V
C2002	0806169	ELECTROLYTIC 47UF 16V
C2003	0806146	ELECTROLYTIC 2.2UF 50V
C2004	0268437	POLYPROPYLENE 4700PF+-5%50V
C2005	0207709	CAPACITOR 47UF+-20% 35V
C2006	0249655	CERAMIC CHIP 1000PF+-10% 1000V
C2007	0249656	CERAMIC CHIP 1000PF+-10% 500V
C2008	0806146	ELECTROLYTIC 2.2UF 50V
C2009	0893086	CERAMIC CHIP 0.1UF+80-20% 50V
C2011	0209852	CERAMIC CHIP 180PF+-5% 50V

SYMBOL NO	P-NO	DESCRIPTION
C2012	0893086	CERAMIC CHIP 0.1UF+80-20% 50V
C2013	0893086	CERAMIC CHIP 0.1UF+80-20% 50V
C2014	0880194	CAPACITOR 0.1UF+-5% 50V
C2015	0202151	CERAMIC CHIP 2200PF+-5% 50V
C2016	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C2017	0806145	ELECTROLYTIC 1UF 50V
C2018	0893062	CERAMIC CHIP 1UF+80-20% 16V
R2002	0103869	CHIP RESISTOR 150KOHM+-5% 0.1W
R2003	0103876	CHIP RESISTOR 560KOHM+-5% 0.1W
R2004	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2005	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2006	0103819	CHIP RESISTOR 10 OHM+-5% 0.1W
R2007	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2008	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2009	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2011	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2012	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R2013	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2014	0103846	CHIP RESISTOR 1.8KOHM+-5% 0.1W
R2015	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2016	0103814	CHIP RESISTOR 3.9 OHM+-10% 0.1W
R2017	0103846	CHIP RESISTOR 1.8KOHM+-5% 0.1W
R2018	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2019	0103848	CHIP RESISTOR 2.7KOHM+-5% 0.1W
R2020	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R2022	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R2023	0103882	JUMPER CHIP RESISTOR
R2024	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2025	0103874	CHIP RESISTOR 390KOHM+-5% 0.1W
R2026	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2027	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
RT2001	5035204	SEMI VARIABLE 2.2MOHM
RT2002	5030251	SEMI VARIABLE 1MOHM
RT2003	5040103	SEMI VARIABLE 470 OHM
D2001	5337137	DIODE MA141K
D2002	5337322	DIODE MA199
IC2001	1365881	IC HA118179F
Q2001	5323831	TRANSISTOR 2SD974
Q2002	5326685	TRANSISTOR XN1B301
⚠T2001	5240568	TRANS
L2001	0773003	COIL 47UH
L2002	5244016	COIL
⚠CS2001	EF11242	SOCKET,CRT
PG2001	5669631	CONNECTOR
PG2002	5668469	PLUG
⚠TF2001	5721352	FUSE

CHAPTER 6 SCHEMATIC, CIRCUIT BOARD AND BLOCK DIAGRAMS/ MICROPROCESSOR PIN FUNCTION TABLES

Cautions when using schematic diagrams

Caution for safety

The parts marked ⚠ are critical for safety. Be sure to use the specified parts to ensure safety when replacing them.

1. Values in schematic diagrams

The values, dielectric strength (power capacitance) and tolerances of the resistors (excluding variable resistors) and capacitors are indicated in the schematic diagrams using abbreviations.

[Resistors]

Item	Indication
Value	No indication ..... Ω K ..... k Ω M ..... M Ω
Tolerance	No indication ..... ±5% (All tolerances other than ± 5% are indicated in the schematic diagrams)
Power capacitance	No indication ..... 1/8W (1/16W for leadless resistors without indication) All capacitances other than the above are indicated in the schematic diagrams.

[Capacitors]

Item	Indication
Value	No indication ..... μF P ..... pF
Dielectric strength	No indication ..... 50V (All dielectric strengths other than 50V are indicated in the schematic diagrams.)

[Coils]

Item	Indication
Value	μ ..... μH m ..... mH

Cautions when using circuit board diagrams

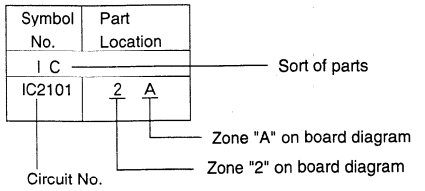
1. Identifications of sides A/B in circuit board diagrams

1) Board having a pattern on one side and parts on both sides.
   - Side A: Shows discrete parts, viewed from the pattern side.
   - Side B: Shows leadless parts, viewed from the pattern side.
2) Board having patterns on both sides and parts on both sides.
   - Side A: Shows parts and patterns which can be seen when the case is opened.
   - Side B: Shows parts and the pattern on the back of side A.

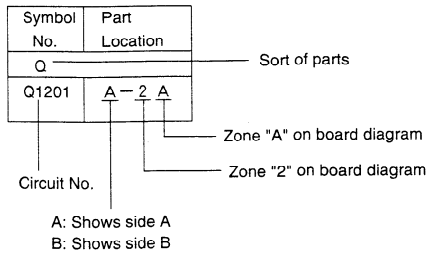
2. Table for indexing locations of parts

This table shows locations of each part on the circuit board diagrams. The locations are indicated using the guide scales on the external lines of diagrams.

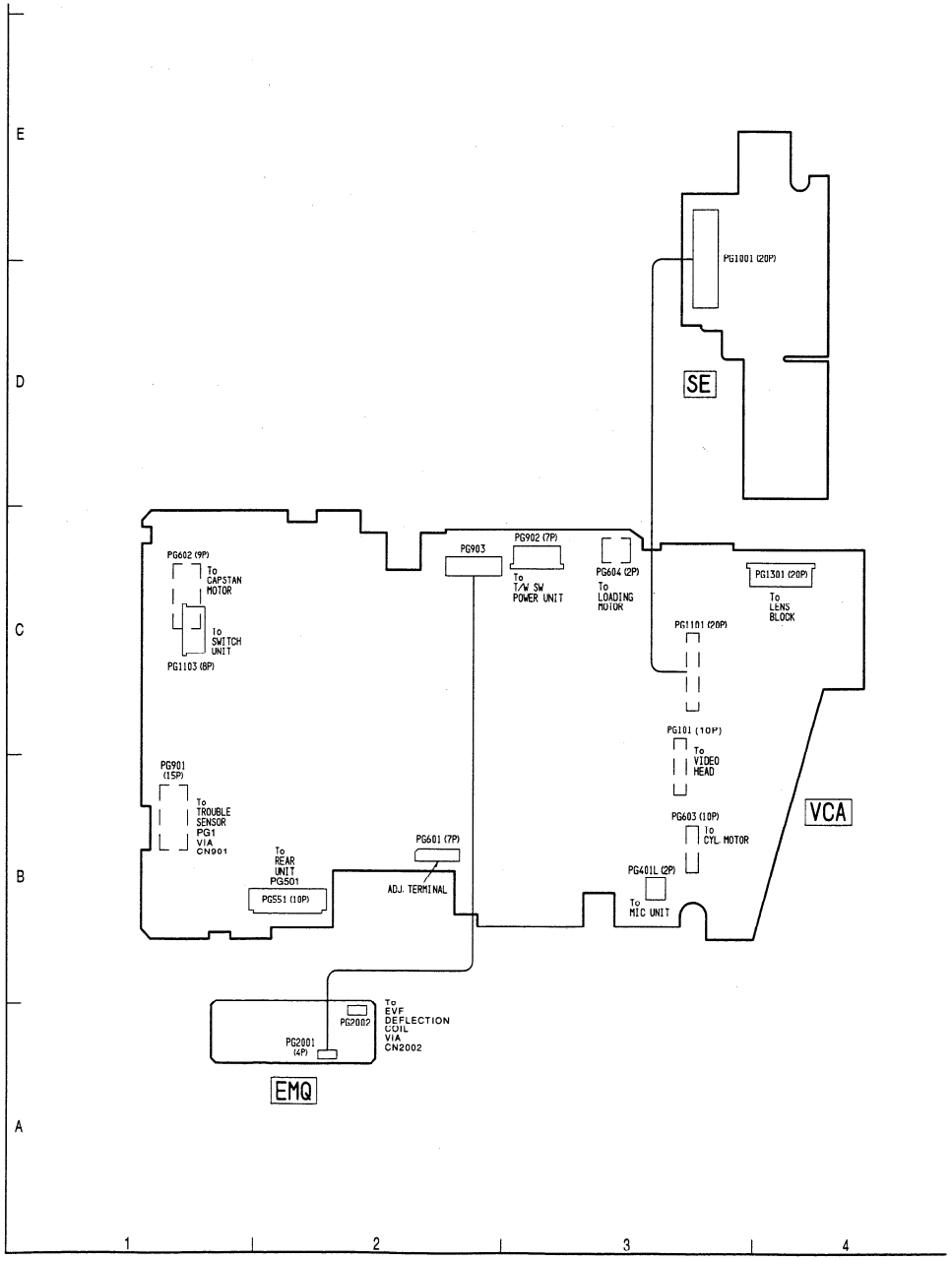
1) In case of one-layer board



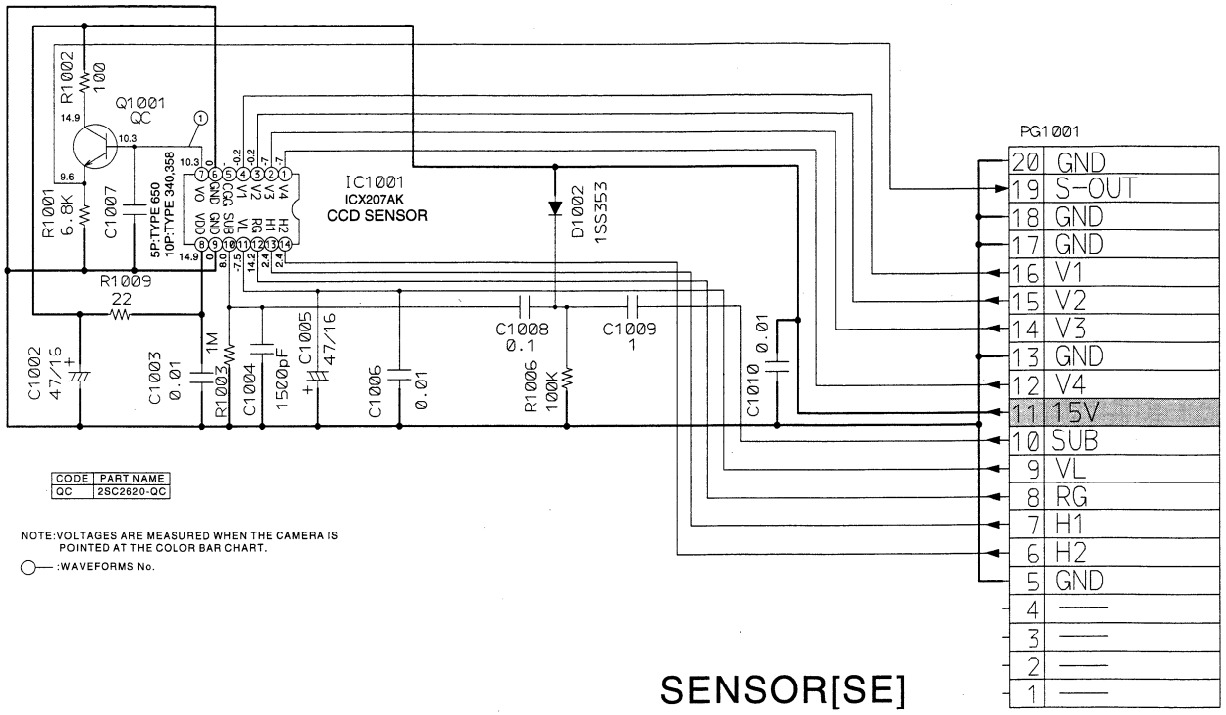
2) In case of side A/B indication board



INTERNAL WIRING DIAGRAM



SENSOR [SE] SCHEMATIC DIAGRAM



CODE	PART NAME
QC	2SC2620-QC

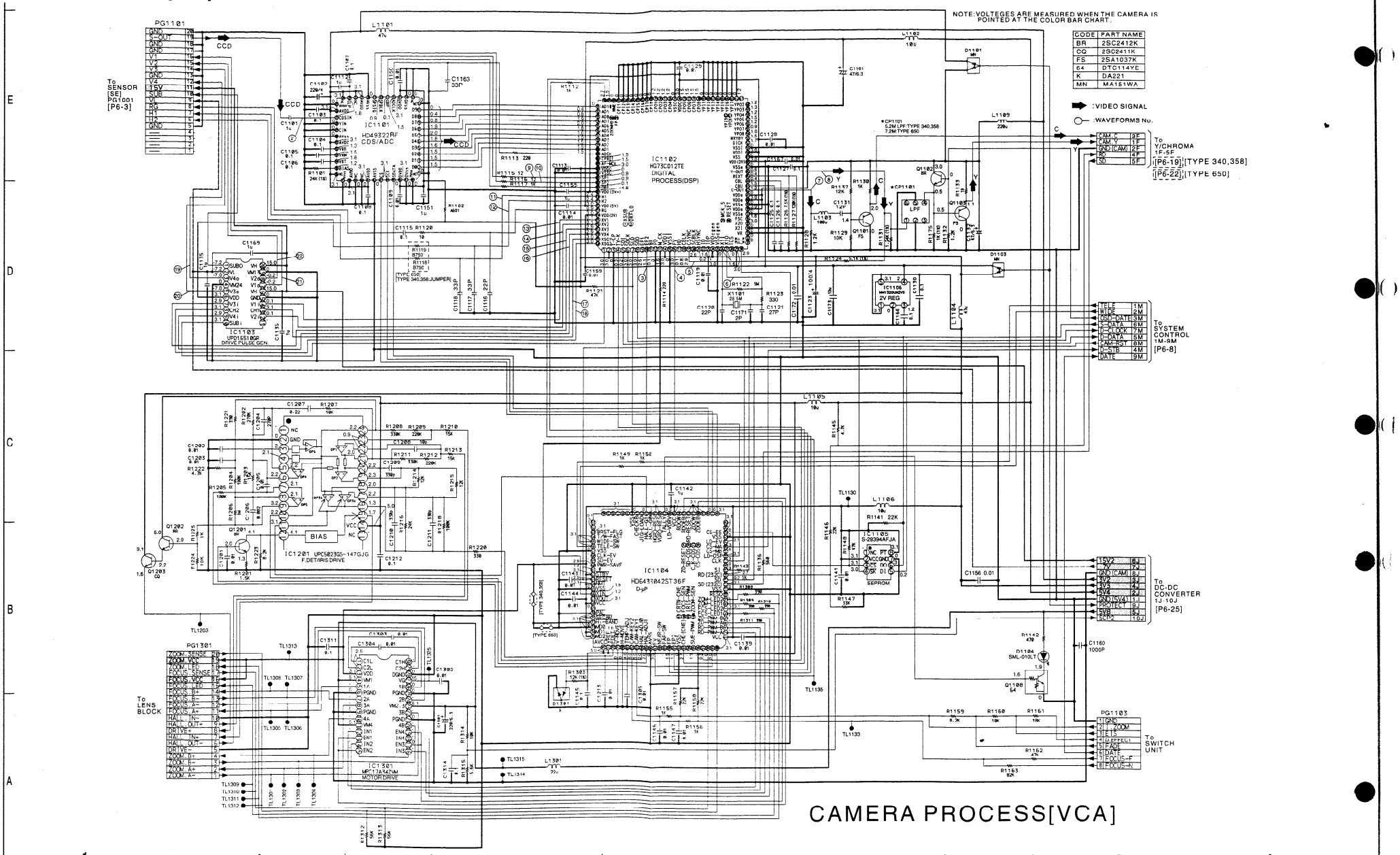
NOTE:VOLTAGES ARE MEASURED WHEN THE CAMERA IS POINTED AT THE COLOR BAR CHART.

○— :WAVEFORMS No.

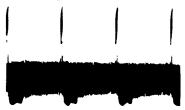
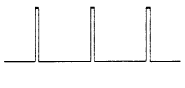
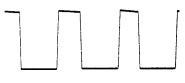
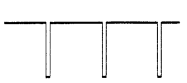
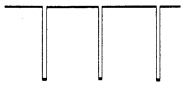
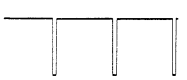
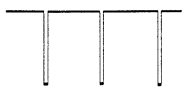
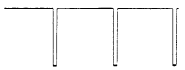
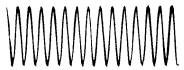
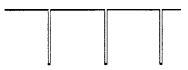
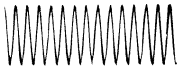
SENSOR[SE]

To
CAMERA PROCESS
[VCA]
PG1101
[P6-4]

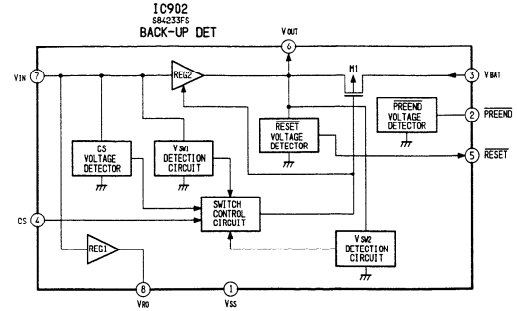
CAMERA PROCESS [VCA] SCHEMATIC DIAGRAM

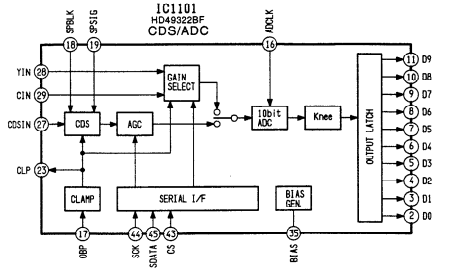


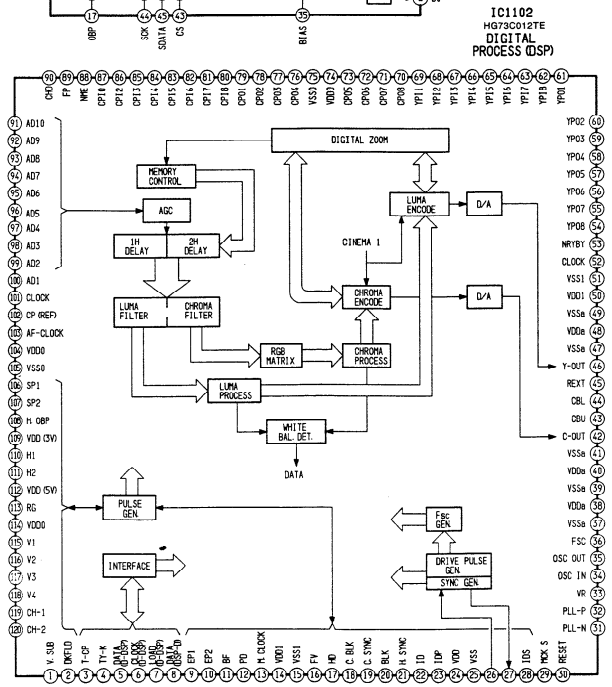
CAMERA WAVEFORMS

1-A IC1001-7 1.1Vp-p 0.2V/20.0µsec.cm COLOR CHART	7-A IC1102-42 550mVp-p 0.2V/20.0µsec.cm COLOR CHART	13-A IC1102-115 3.1Vp-p 1V/20.0µsec.cm COLOR CHART	19-A IC1103-3 7.3Vp-p 2V/20.0µsec.cm COLOR CHART
			
2-A IC1101-27 1.1Vp-p 0.2V/20.0µsec.cm COLOR CHART	8-A IC1102-46 1.0Vp-p 0.2V/20.0µsec.cm COLOR CHART	14-A IC1102-116 3.1Vp-p 1V/20.0µsec.cm COLOR CHART	20-A IC1103-5 7.3Vp-p 2V/20.0µsec.cm COLOR CHART
			
3-A IC1102-10 3.0Vp-p 1V/5.0msec.cm COLOR CHART	9-A IC1102-106 4.2Vp-p 1V/50.0nsec.cm COLOR CHART	15-A IC1102-117 3.1Vp-p 1V/20.0µsec.cm COLOR CHART	21-A IC1103-17 7.3Vp-p 2V/20.0µsec.cm COLOR CHART
			
4-A IC1102-16 3.0Vp-p 1V/5.0msec.cm COLOR CHART	10-A IC1102-107 4.2Vp-p 1V/50.0nsec.cm COLOR CHART	16-A IC1102-118 3.1Vp-p 1V/20.0µsec.cm COLOR CHART	22-A IC1103-18 7.3Vp-p 2V/20.0µsec.cm COLOR CHART
			
5-A IC1102-19 3.0Vp-p 1V/20.0µsec.cm COLOR CHART	11-A IC1102-110 7.0Vp-p 2V/100nsec.cm COLOR CHART	17-A IC1102-119 3.1Vp-p 1V/5.0msec.cm COLOR CHART	
			
6-A IC1102-27 1.6Vp-p 0.5V/50.0nsec.cm COLOR CHART	12-A IC1102-111 7.0Vp-p 2V/100nsec.cm COLOR CHART	18-A IC1102-120 3.1Vp-p 1V/5.0msec.cm COLOR CHART	
			

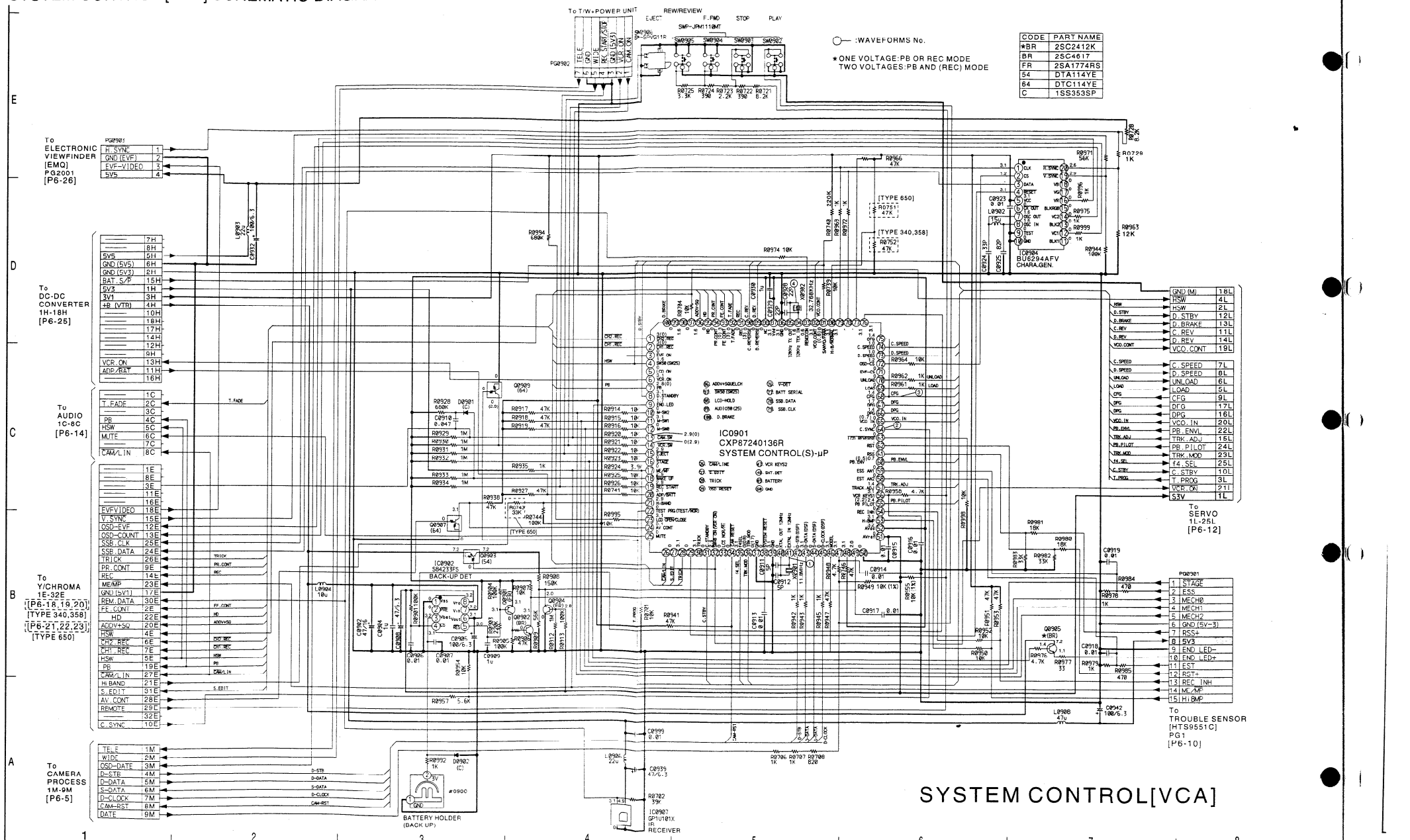
IC BLOCK DIAGRAMS





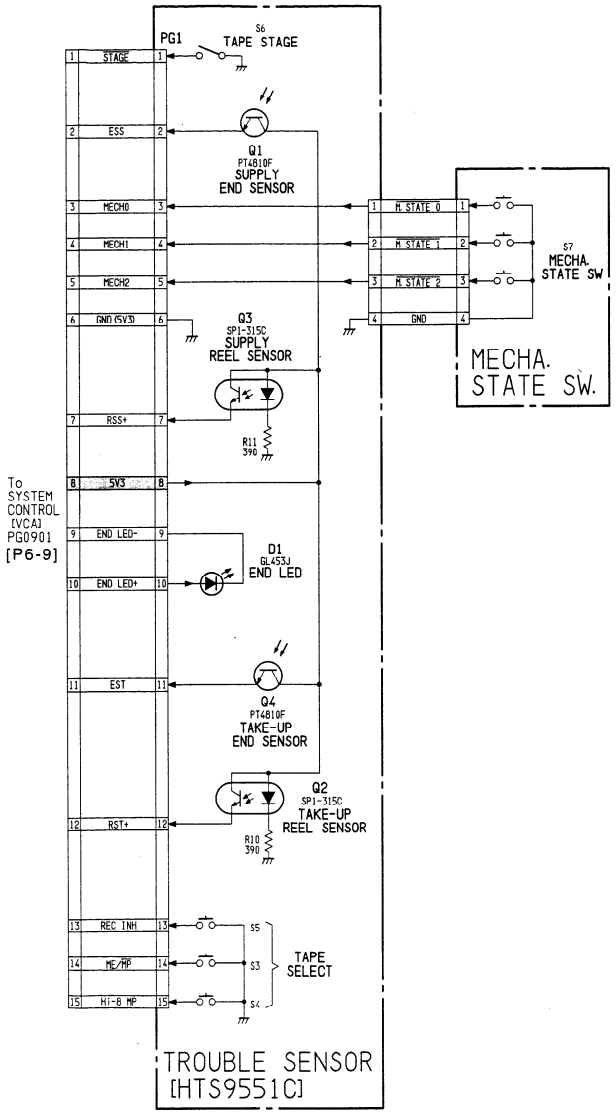


SYSTEM CONTROL [VCA] SCHEMATIC DIAGRAM



CODE	PART NAME
★BR	2SC2412K
BR	2SC4617
FR	2SA1774RS
54	DTA114YE
64	DTC114YE
C	1SS353SP

TROUBLE SENSOR [HTS9551C] SCHEMATIC DIAGRAM



SYS. CON WAVEFORMS

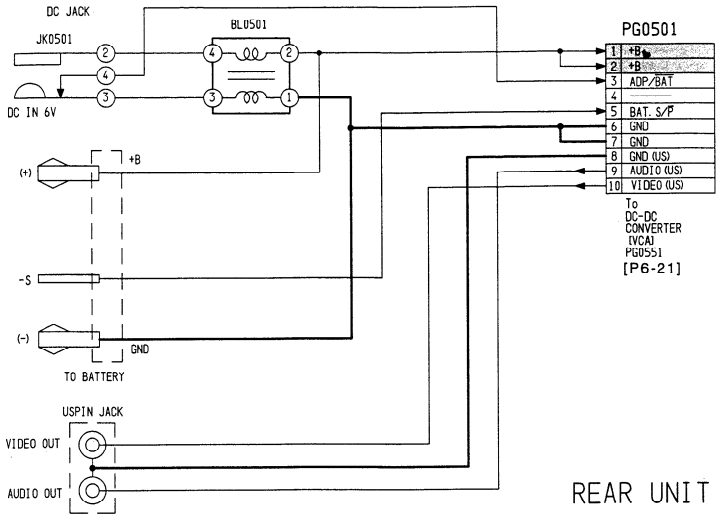
1-A IC901-41 2.8Vp-p
1V/100nsec.cm
REC/PLAY

2-A IC901-64 4.9Vp-p
1V/20.0μsec.cm
REC/PLAY

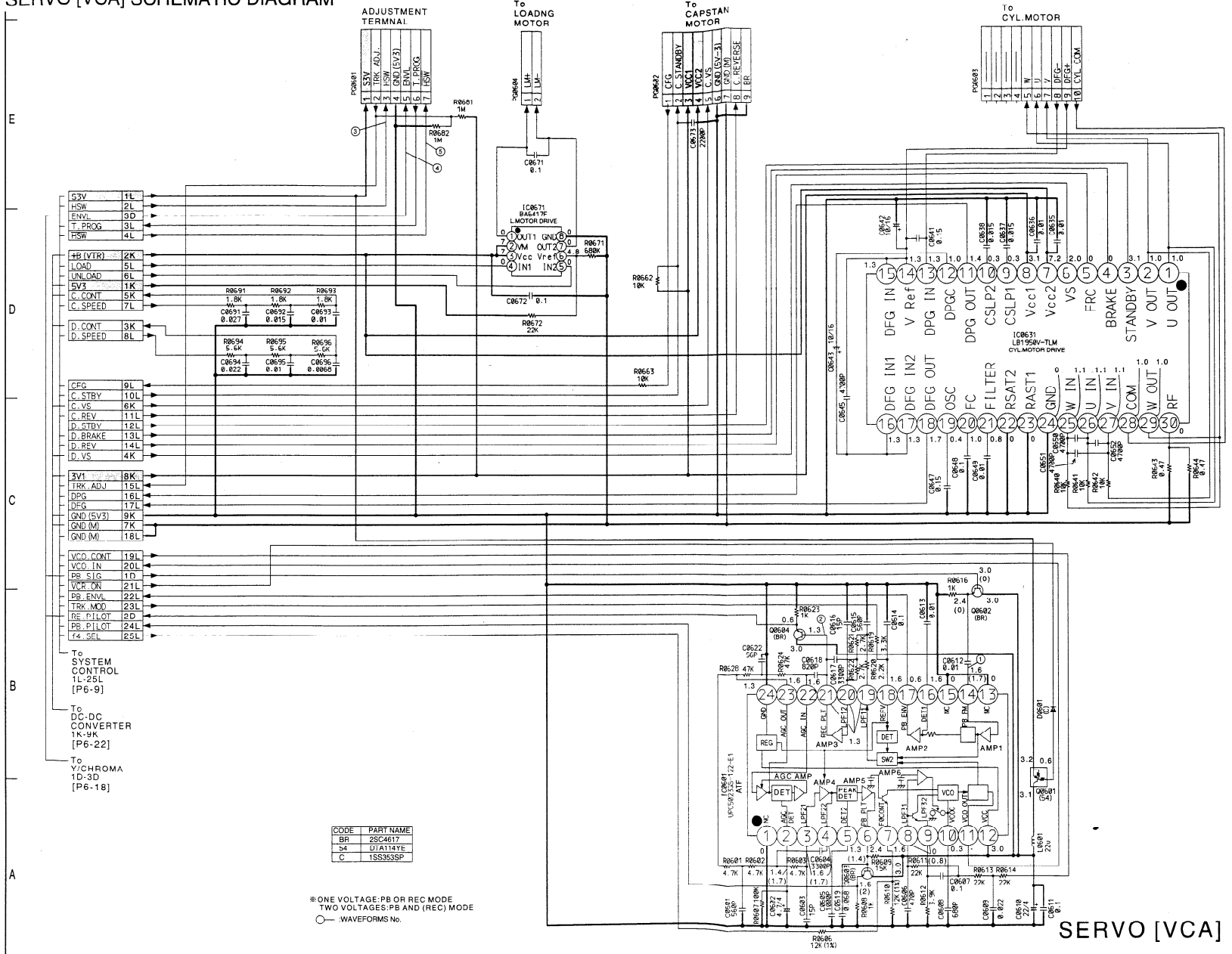
3-A IC901-68 3.2Vp-p
1V/500μsec.cm
REC/PLAY

4-A IC901-85 3.4Vp-p
1V/20.0μsec.cm
REC/PLAY

REAR UNIT SCHEMATIC DIAGRAM

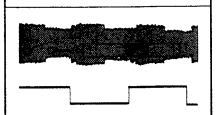


SERVO [VCA] SCHEMATIC DIAGRAM



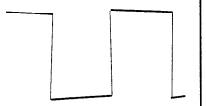
SERVO WAVEFORMS

1-A IC601-14 200mVp-p 0.1V/5.0msec.cm PLAY



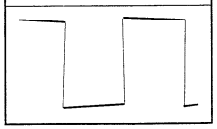
2-A IC601-21 560mVp-p 0.2V/5.0msec.cm REC

3-A PG601-3 3.3Vp-p 1V/5.0msec.cm REC/PLAY

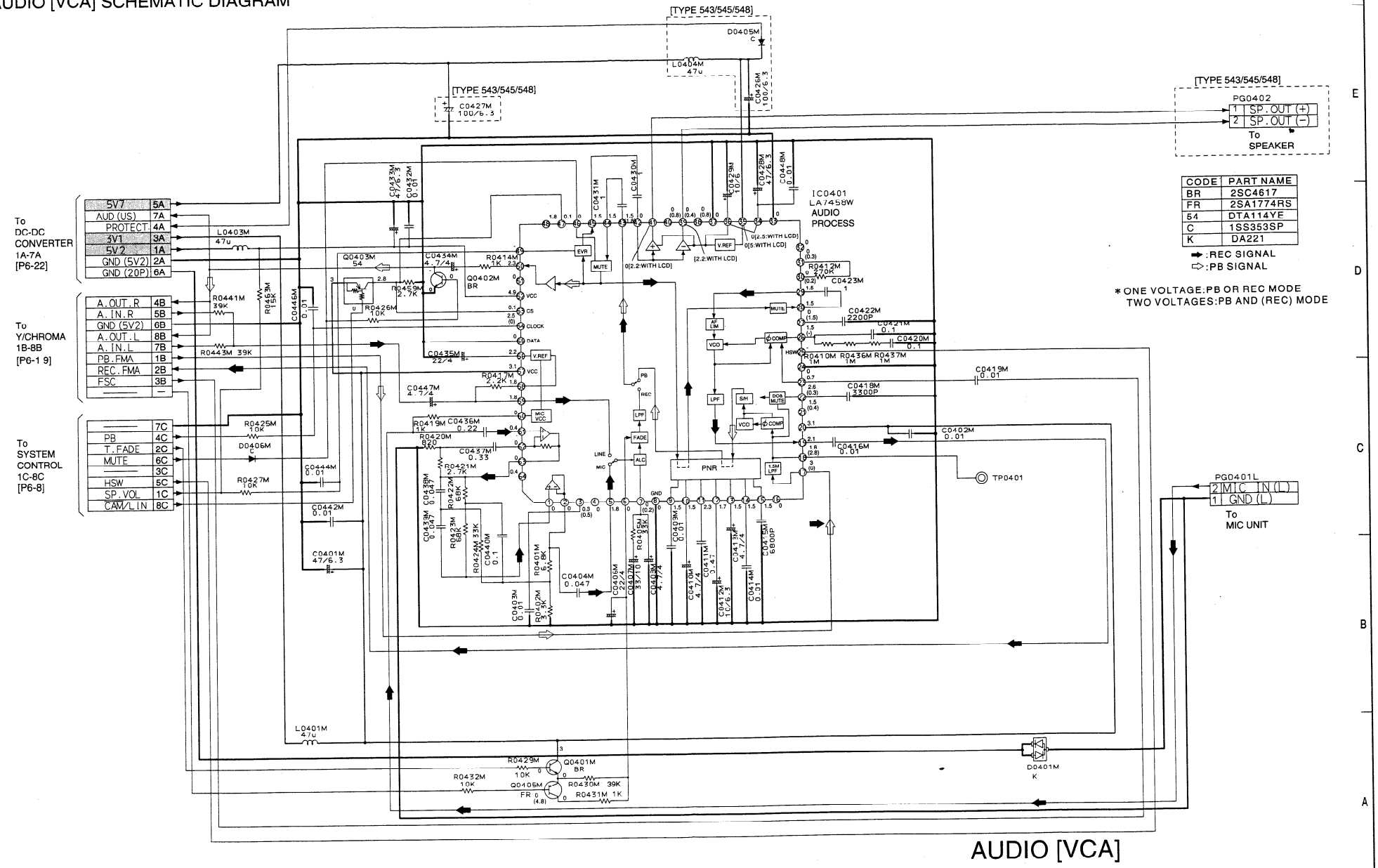


4-A PG601-5 150mVp-p 0.1V/5.0msec.cm PLAY

5-A PG601-7 2.4Vp-p 0.5V/5.0msec.cm REC/PLAY



AUDIO [VCA] SCHEMATIC DIAGRAM

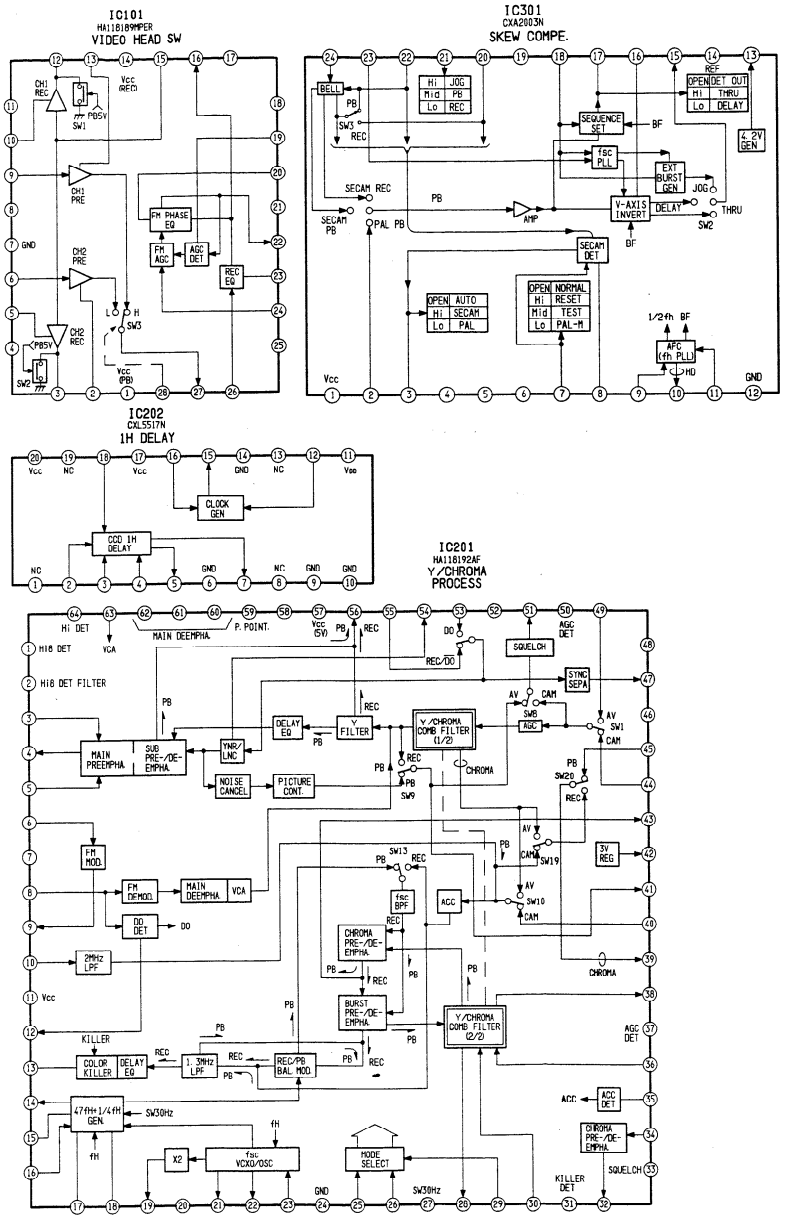


AUDIO [VCA]

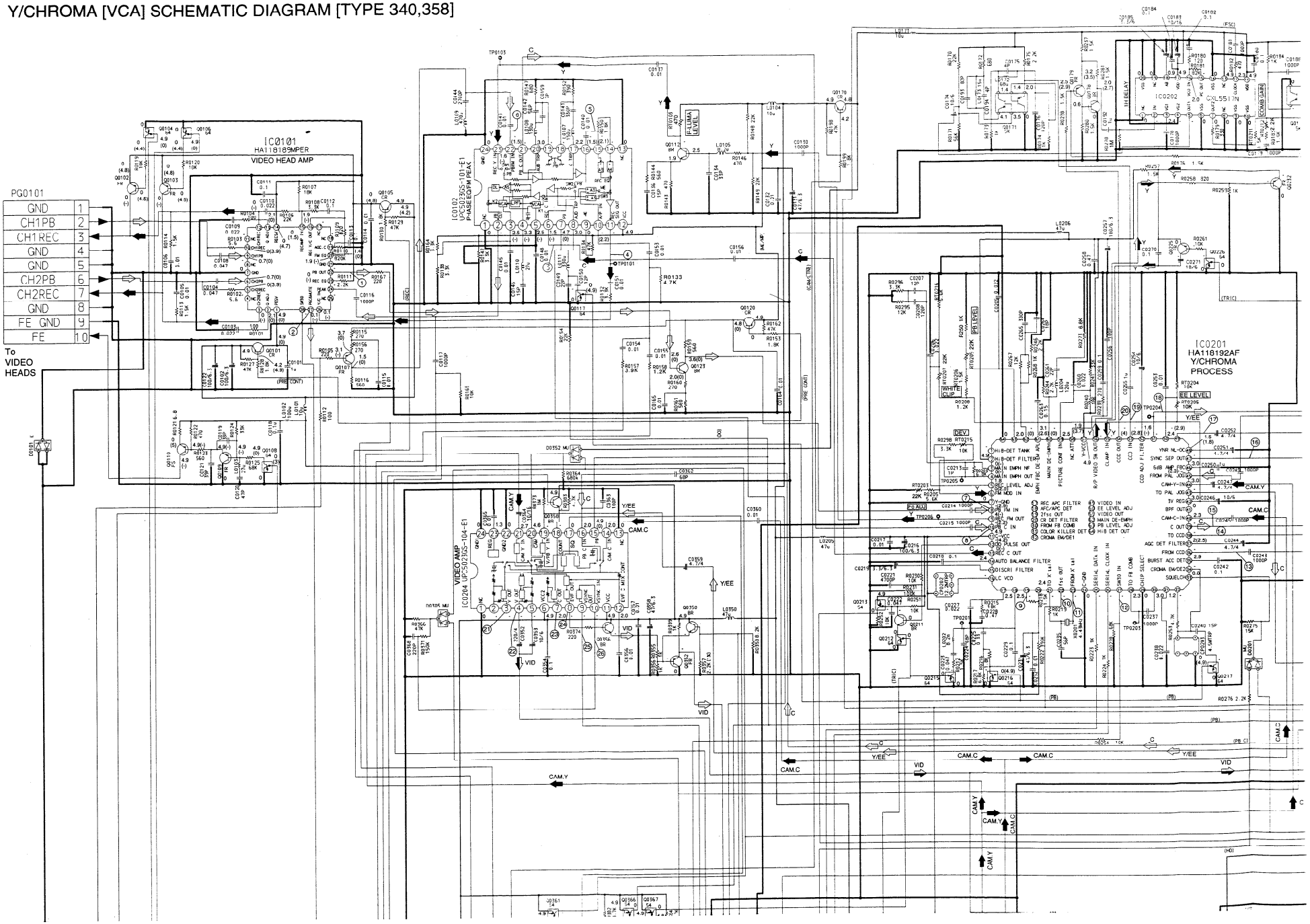
VIDEO WAVEFORMS

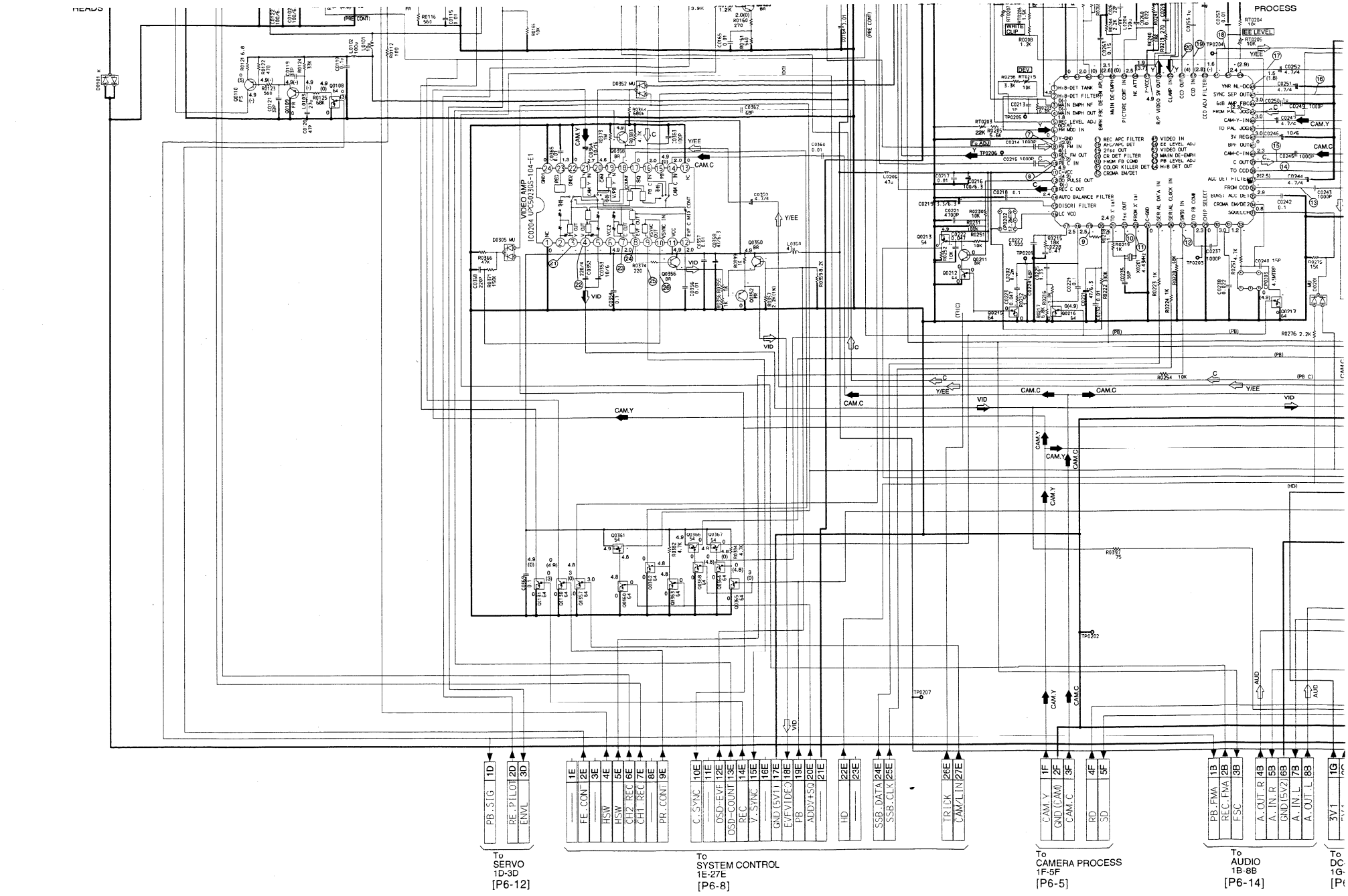
1-B IC101-22 300mVp-p 0.2V/5.0msec.cm PLAY	8-B IC201-10 310mVp-p 0.2V/5.0msec.cm PLAY	15-A IC201-39 610mVp-p 0.2V/20.0µsec.cm REC/PLAY	21-A IC204-3 2.0Vp-p 0.5V/20.0µsec.cm REC
2-B IC101-27 200mVp-p 0.1V/5.0msec.cm PLAY	9-A IC201-19 400mVp-p 0.2V/20.0µsec.cm REC/PLAY	16-A IC201-47 4.8Vp-p 1V/20.0µsec.cm REC/PLAY	21-B IC204-3 2.2Vp-p 0.5V/20.0µsec.cm PLAY
3-A IC102-6 380mVp-p 0.1V/20.0µsec.cm REC	10-A IC201-22 400mVp-p 0.2V/20.0µsec.cm REC/PLAY	17-A IC201-49 1.0Vp-p 0.2V/20.0µsec.cm REC	22-A IC204-4 2.0Vp-p 0.5V/20.0µsec.cm REC/PLAY
4-A IC102-11 520mVp-p 0.2V/20.0µsec.cm REC	11-A IC201-23 750mVp-p 0.2V/200nsec.cm REC/PLAY	18-A IC201-51 1.1Vp-p 0.2V/20.0µsec.cm REC	23-B IC204-7 1.2Vp-p 0.5V/20.0µsec.cm PLAY
5-A IC102-15 700mVp-p 0.2V/20.0µsec.cm REC	12-A IC201-27 3.0Vp-p 1V/5.0msec.cm REC/PLAY	18-B IC201-51 1.2Vp-p 0.2V/20.0µsec.cm PLAY	24-A IC204-8 2.1Vp-p 0.5V/20.0µsec.cm REC/PLAY
6-B IC102-22 340mVp-p 0.2V/5.0msec.cm PLAY	13-A IC201-36 110mVp-p 50mV/20.0µsec.cm REC/PLAY	19-A IC201-53 350mVp-p 0.1V/20.0µsec.cm REC/PLAY	25-A IC204-9 4.6Vp-p 1V/5.0msec.cm REC/PLAY
7-B IC201-8 560mVp-p 0.2V/5.0msec.cm PLAY	14-A IC201-38 200mVp-p 50mV/20.0µsec.cm REC/PLAY	20-A IC201-54 490mVp-p 0.1V/20.0µsec.cm REC/PLAY	26-A IC204-10 2.5Vp-p 1V/5.0msec.cm REC/PLAY

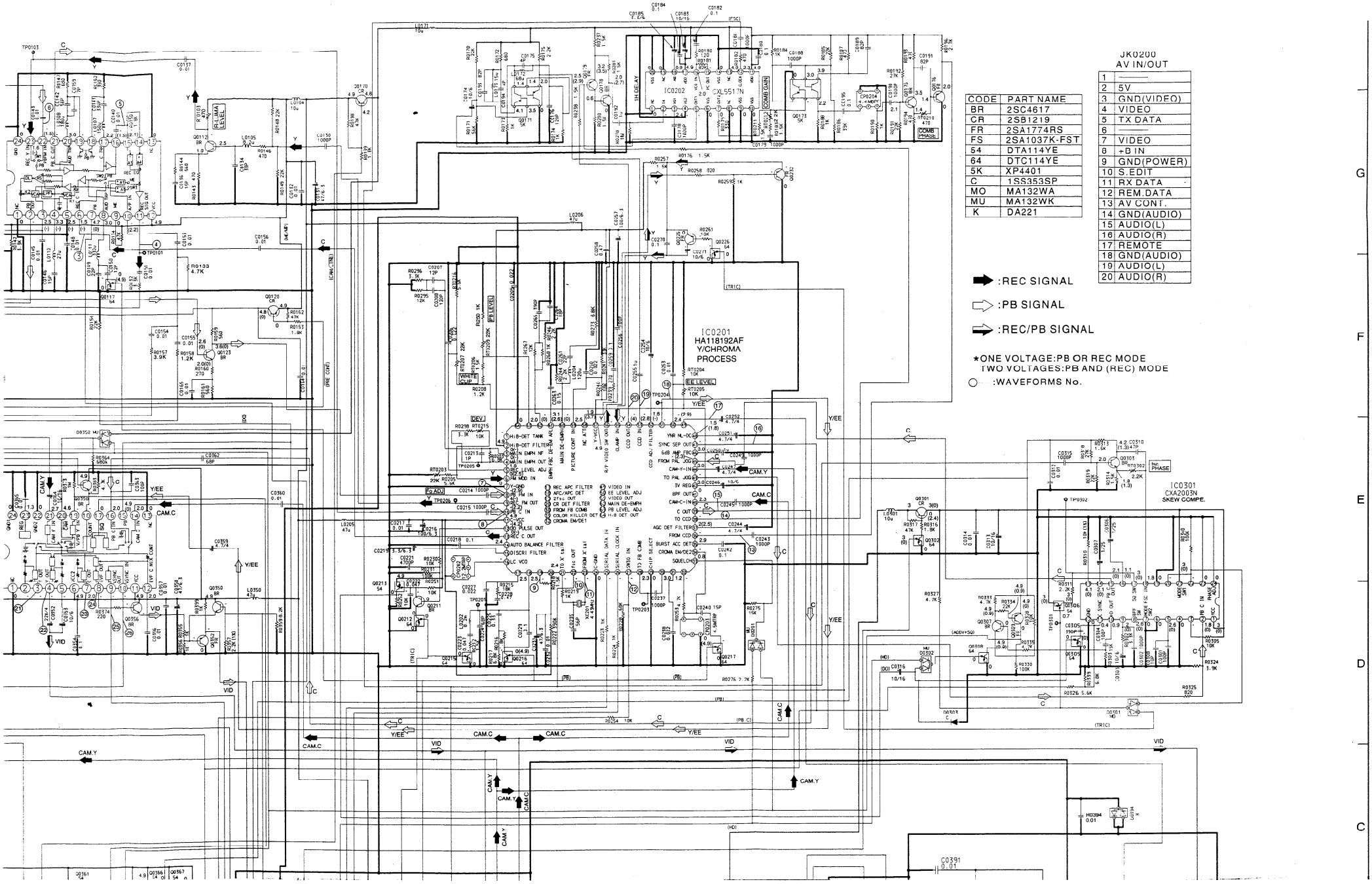
IC BLOCK DIAGRAMS

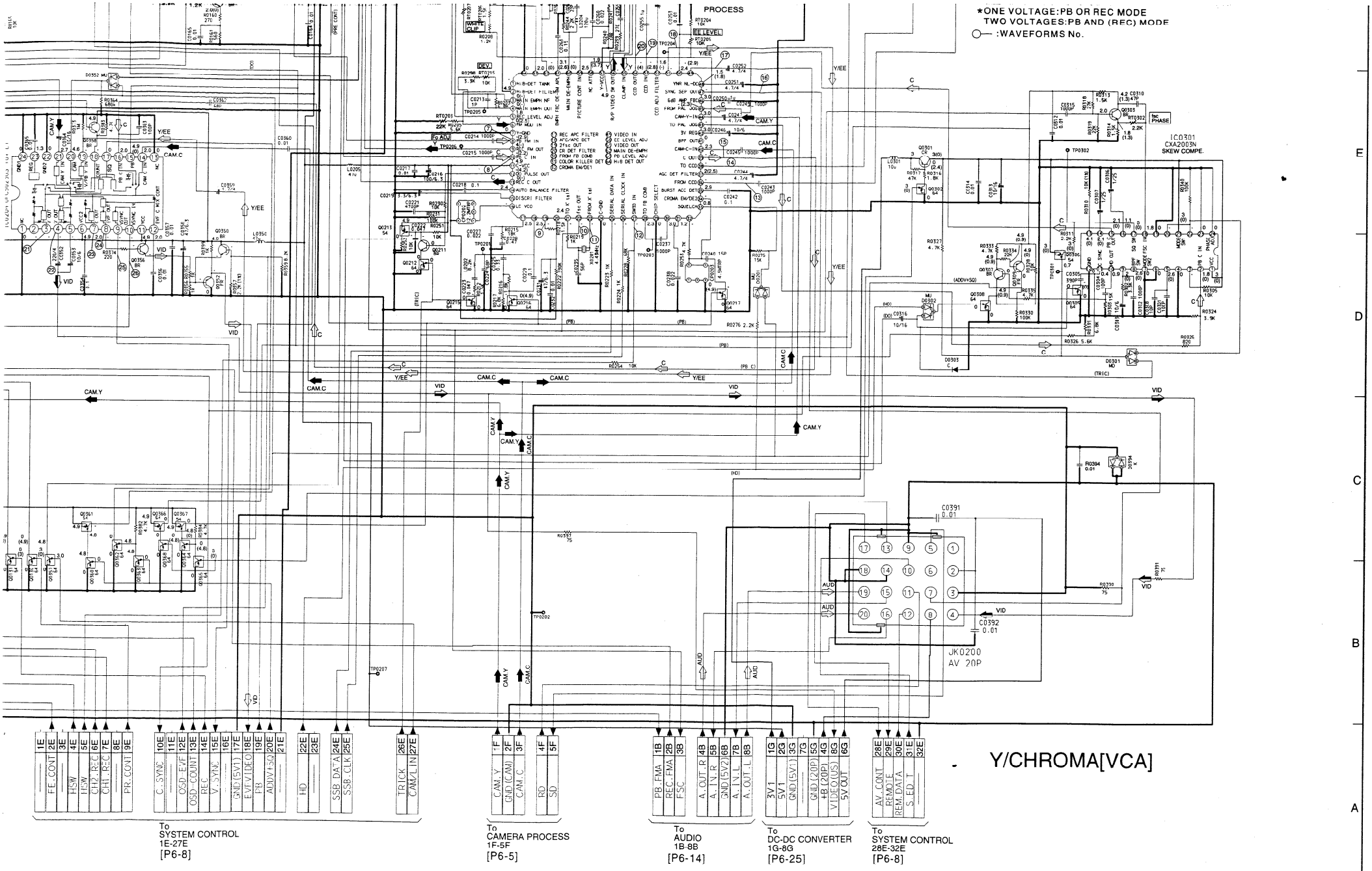


Y/CHROMA [VCA] SCHEMATIC DIAGRAM [TYPE 340,358]

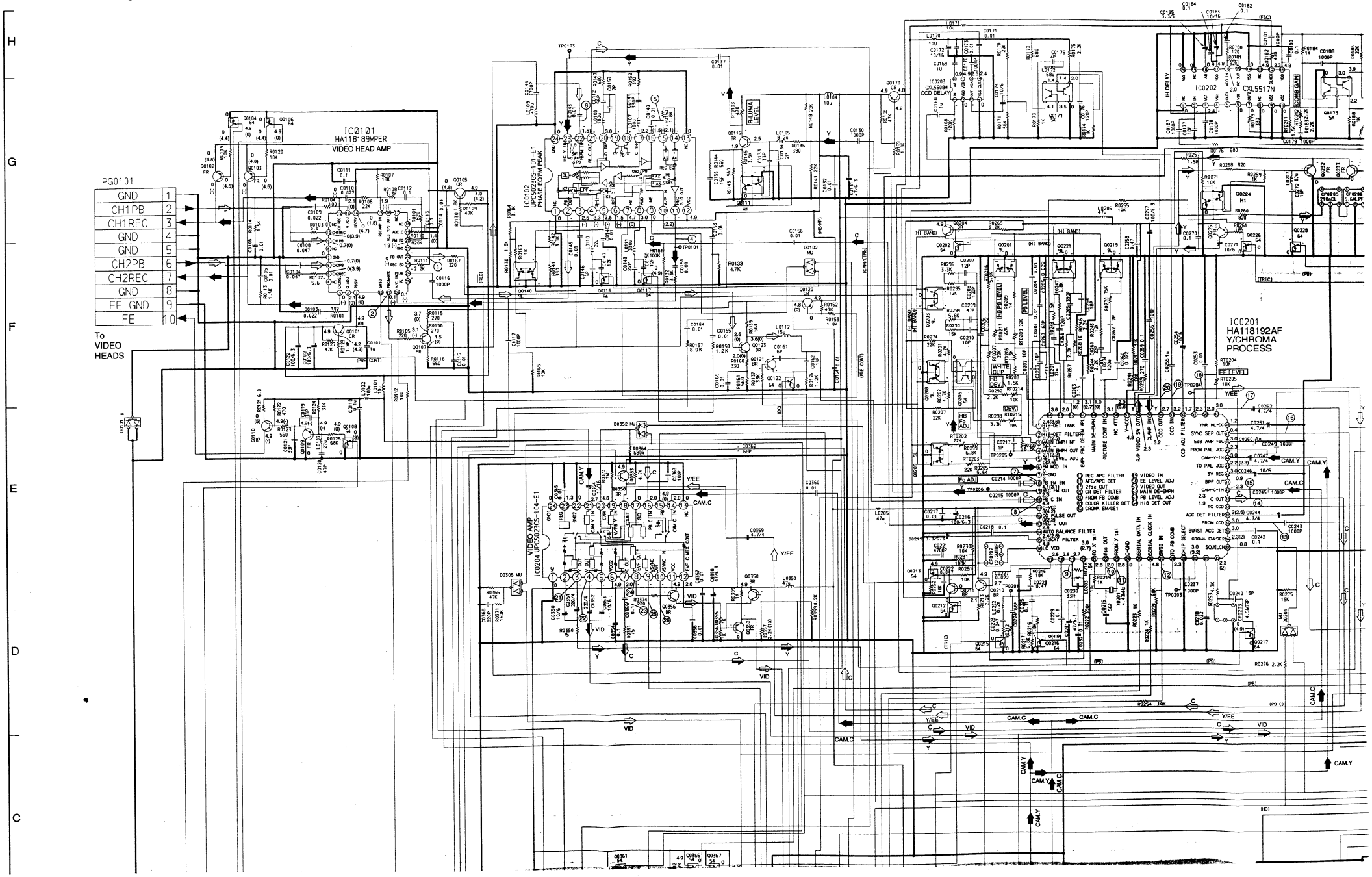


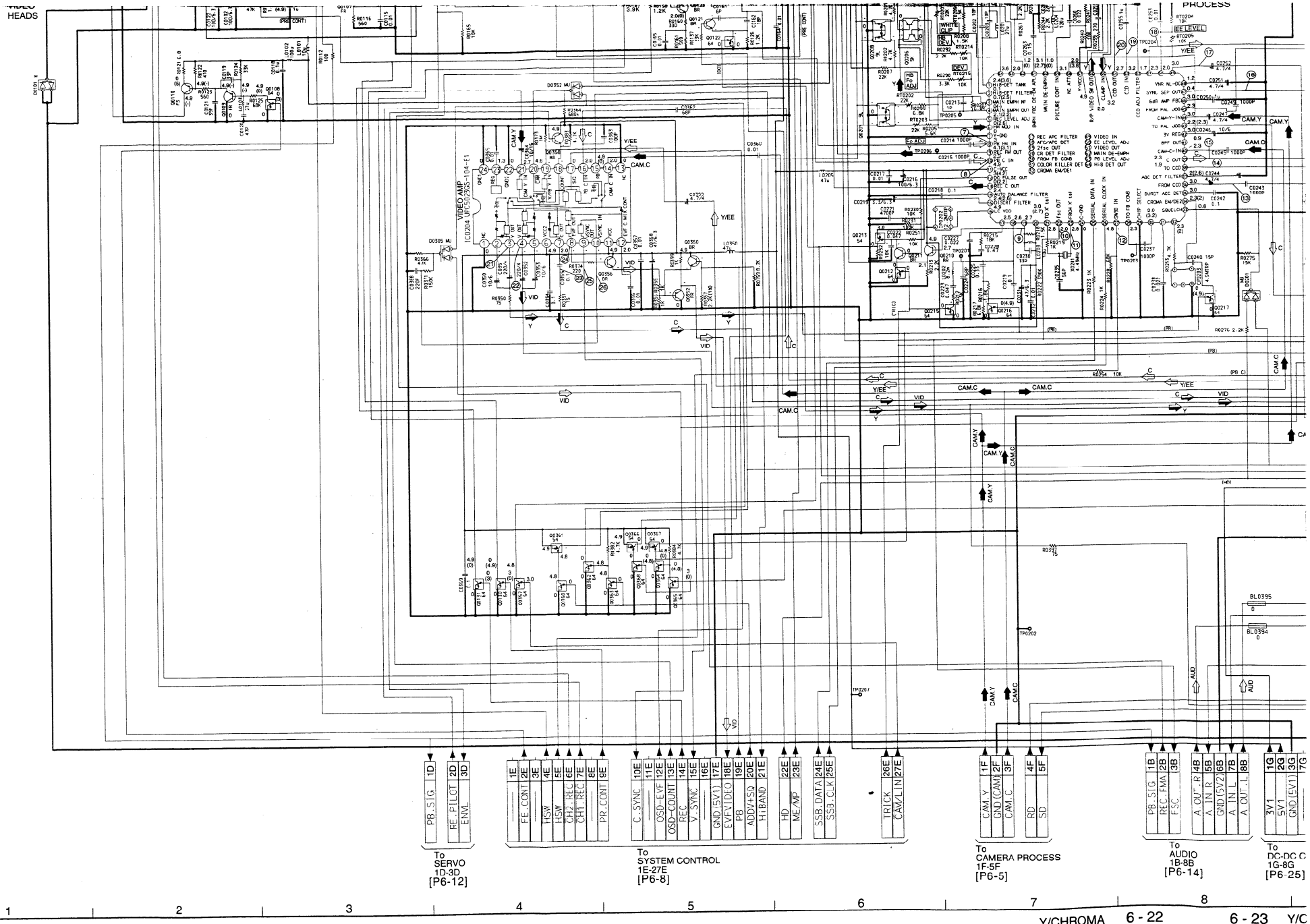

HEADS
PROCESS
VIDEO AMP
IC0204 UPC5023GS-104-E1
CAM.Y
CAM.C
Y/EE
VID
PB.SIG 1D
RE.PILOT 2D
ENVL 3D
FE.CONT 1E
HSW 3E
HSW 4E
CH2.REC 5E
CH1.REC 6E
PR.CONT 7E
8E
9E
C.SYNC 10E
11E
OSD-EVF 12E
OSD-COUNT 13E
REC 14E
V.SYNC 15E
16E
GND(5V1) 17E
EVFVIDEO 18E
FB 19E
ADDV+SQ 20E
21E
HD 22E
23E
SSB.DATA 24E
SSB.CLK 25E
TRICK 26E
CAM/CLIN 27E
CAM.Y 1F
GND(CAM) 2F
CAM.C 3F
RD 4F
SD 5F
PB.FMA 1B
REC.FMA 2B
3B
FSC
A.OUT.R 4B
A.IN.R 5B
GND(5V2) 6B
A.IN.L 7B
A.OUT.L 8B
3V1 1G
To SERVO 1D-3D [P6-12]
To SYSTEM CONTROL 1E-27E [P6-8]
To CAMERA PROCESS 1F-5F [P6-5]
To AUDIO 1B-8B [P6-14]
1
2
3
4
5
6
7
8

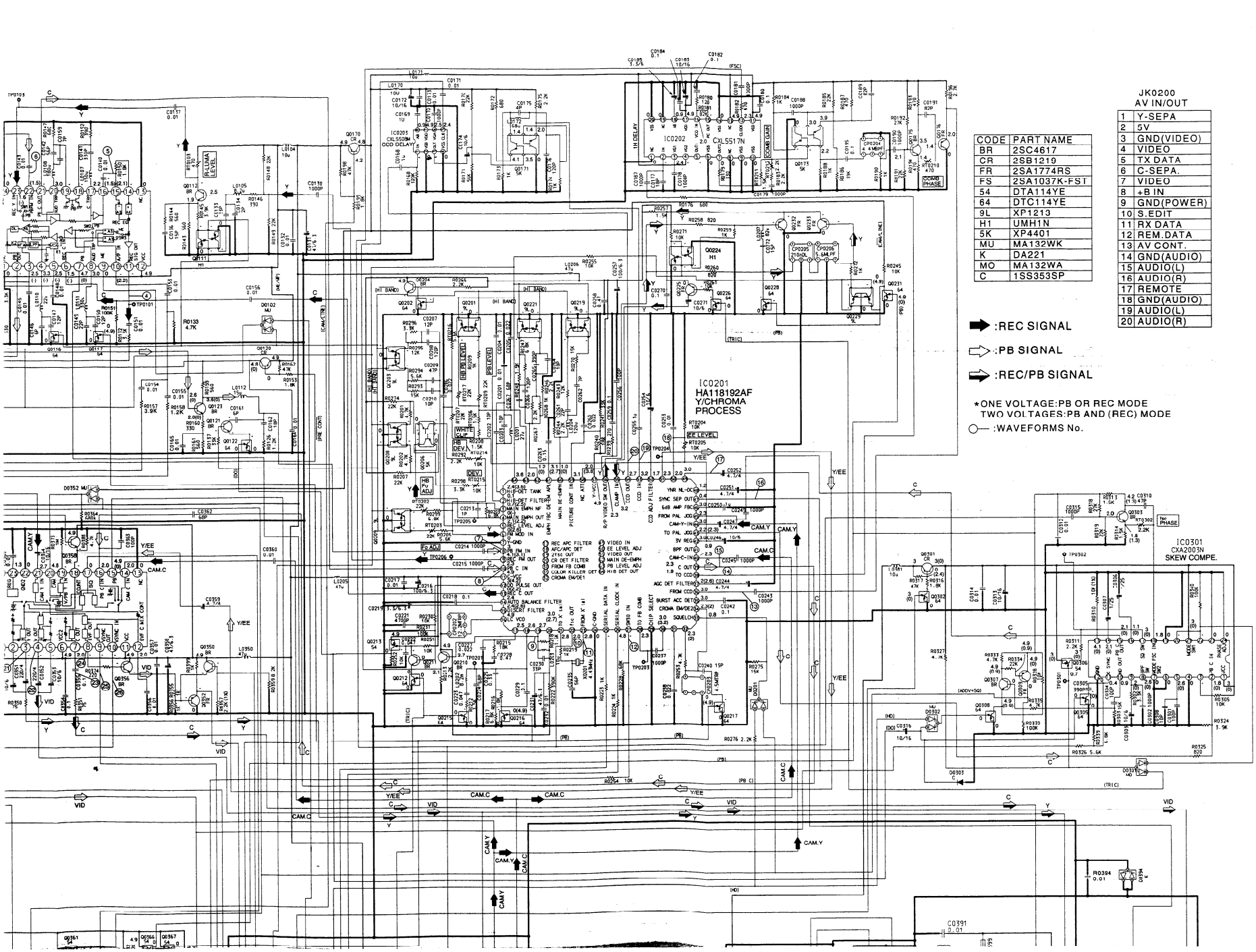

IC0201
HA118192AF
Y/CHROMA
PROCESS
IC0202
CXL5517N
IC0301
CXA2003N
SKEW COMPE.
JK0200
AV IN/OUT
1 ——
2 5V
3 GND(VIDEO)
4 VIDEO
5 TX DATA
6 ——
7 VIDEO
8 +B IN
9 GND(POWER)
10 S.EDIT
11 RX DATA
12 REM.DATA
13 AV CONT.
14 GND(AUDIO)
15 AUDIO(L)
16 AUDIO(R)
17 REMOTE
18 GND(AUDIO)
19 AUDIO(L)
20 AUDIO(R)
CODE PART NAME
BR 2SC4617
CR 2SB1219
FR 2SA1774RS
FS 2SA1037K-FST
54 DTA114YE
64 DTC114YE
5K XP4401
C 1SS353SP
MO MA132WA
MU MA132WK
K DA221
:REC SIGNAL
:PB SIGNAL
:REC/PB SIGNAL
*ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE
:WAVEFORMS No.
CAM.Y
CAM.C
Y/EE
VID
(PB)
(TR1C)
(HD)


*ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE
○— :WAVEFORMS No.
PROCESS
IC0301
CXA2003N
SKEW COMPE.
JK0200
AV 20P
Y/CHROMA[VCA]
1E FE.CONT
2E
3E
4E HSW
5E HSW
6E CH2.REC
7E CH1.REC
8E
9E PR.CONT
10E C.SYNC
11E
12E OSD.EVF
13E OSD.COUNT
14E REC
15E V.SYNC
16E GND(5V1)
17E EVF.VIDEO
18E PB
19E ADJV+13.2
20E
21E
22E HD
23E
24E SSB.DATA
25E SSB.CLK
26E TRICK
27E CAM.LIN
To SYSTEM CONTROL 1E-27E [P6-8]
1F CAM.Y
2F GND(CAM)
3F CAM.C
To CAMERA PROCESS 1F-5F [P6-5]
4F RD
5F SD
1B PB.FMA
2B REC.FMA
3B FSC
To AUDIO 1B-8B [P6-14]
4B A.OUT.R
5B A.IN.R
6B GND(5V2)
7B A.IN.L
8B A.OUT.L
To DC-DC CONVERTER 1G-8G [P6-25]
1G 3V1
2G 5V1
3G GND(5V1)
5G GND(20P)
4G +B(20P)
8G VIDEO(US)
6G 5V OUT
To SYSTEM CONTROL 28E-32E [P6-8]
28E AV.CONT
29E REMOTE
30E REM.DATA
31E S.ED.T
32E
A
B
C
D
E
4
5
6
7
8
9
10
11
12

Y/CHROMA [VCA] SCHEMATIC DIAGRAM [TYPE 650]



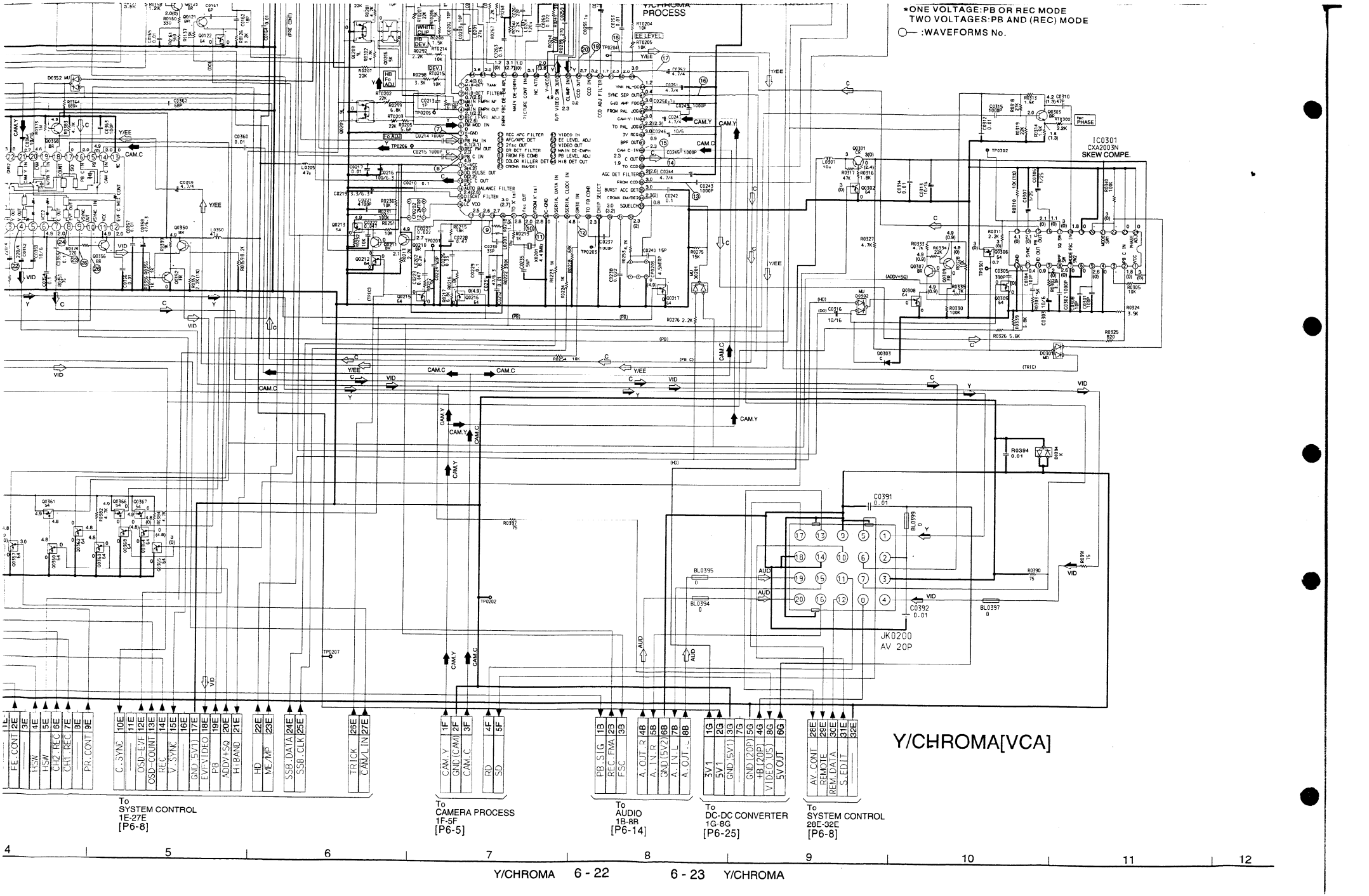

HEADS
VIDEO AMP
IC0204 UPC5023S-104-E1
PROCESS
PB.SIG 1D
RF.PILOT 2D
ENVL 3D
To SERVO 1D-3D [P6-12]
FE.CONT 1E
HSW 3E
HSW 4E
CH2.REC 5E
CH1.REC 7E
PR.CONT 9E
C.SYNC 10E
OSD-EVF 11E
OSD-COUNT 12E
REC 13E
V.SYNC 14E
GND(5V1) 16E
EVFVIDEO 17E
PB 18E
ADV+SQ 19E
HiBAND 20E
HD 21E
ME/MP 22E
SSB.DATA 23E
SS3.C.K 24E
TRICK 25E
CAM/L.IN 26E
27E
To SYSTEM CONTROL 1E-27E [P6-8]
CAM.Y 1F
GND(CAM) 2F
CAM.C 3F
RD 4F
SD 5F
To CAMERA PROCESS 1F-5F [P6-5]
PB.SIG 1B
REC.FM 2B
FSC 3B
A.OUT.R 4B
A.IN R 5B
GND(5V2) 6B
A.IN L 7B
A.OUT.L 8B
To AUDIO 1B-8B [P6-14]
3V1 1G
5V1 2G
GND(EV1) 3G
To DC-DC C 1G-8G [P6-25]
1 2 3 4 5 6 7 8
A B C D E



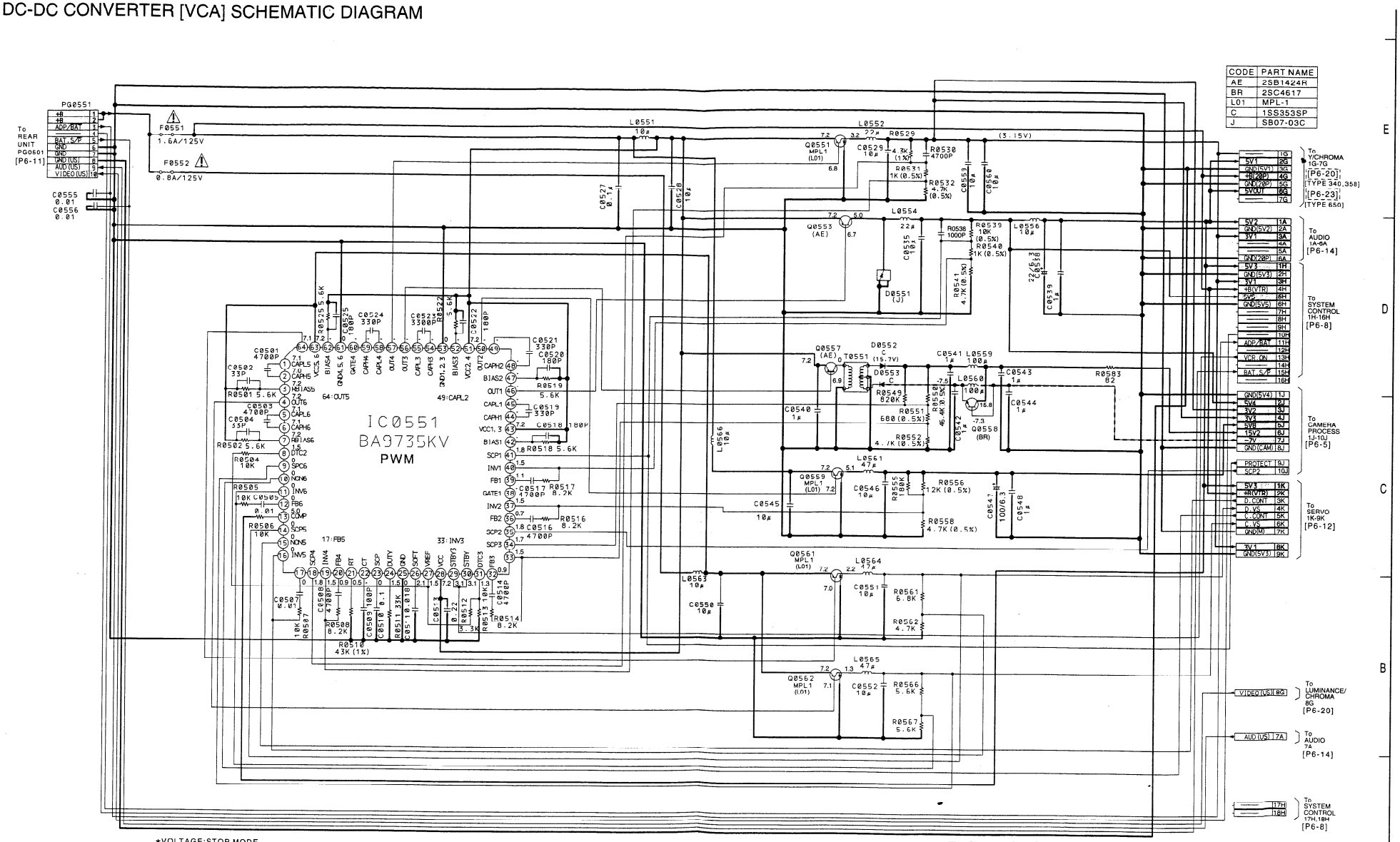
CODE	PART NAME
BR	2SC4617
CR	2SB1219
FR	2SA1774RS
FS	2SA1037K-FST
54	DTA114YE
64	DTC114YE
9L	XP1213
H1	UMH1N
5K	XP4401
MU	MA132WK
K	DA221
MO	MA132WA
C	1SS353SP

JK0200
AV IN/OUT

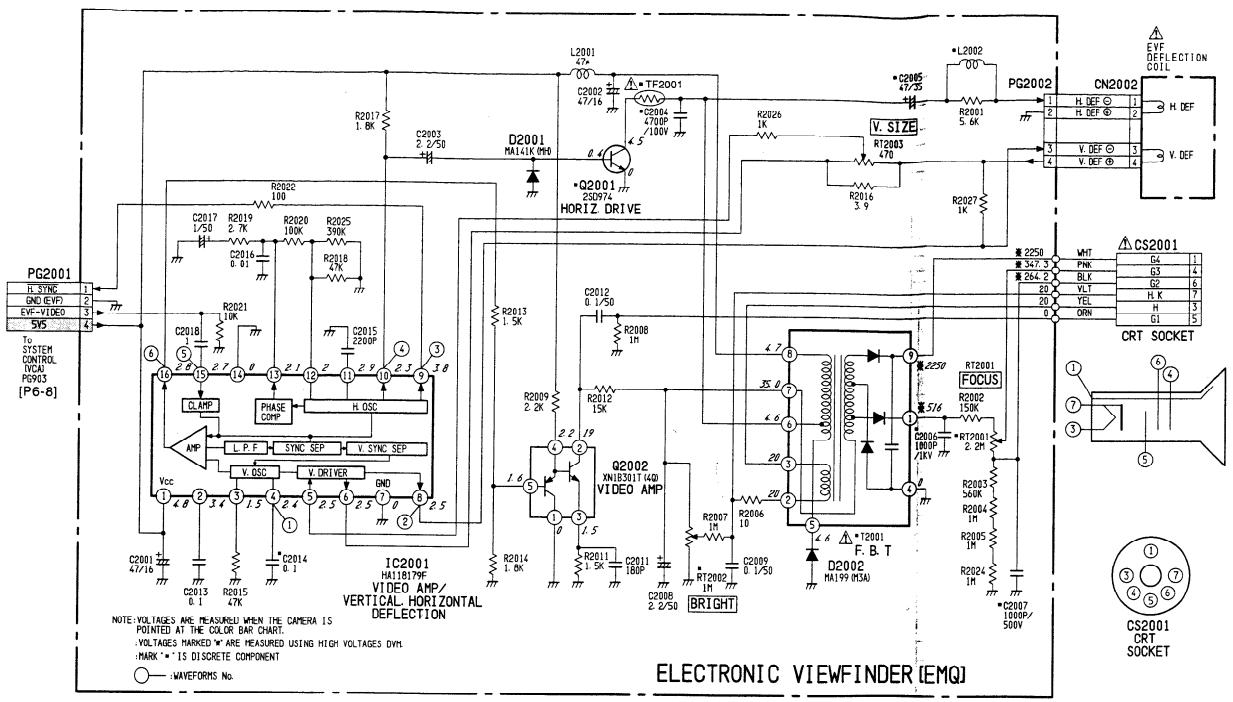
1	Y-SEPA
2	5V
3	GND(VIDEO)
4	VIDEO
5	TX DATA
6	C-SEPA.
7	VIDEO
8	+B IN
9	GND(POWER)
10	S.EDIT
11	RX DATA
12	REM.DATA
13	AV CONT.
14	GND(AUDIO)
15	AUDIO(L)
16	AUDIO(R)
17	REMOTE
18	GND(AUDIO)
19	AUDIO(L)
20	AUDIO(R)


*ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE
○— :WAVEFORMS No.
Y/CHROMA PROCESS
IC0301
CXA2003N
SKEW COMPE.
JK0200
AV 20P
Y/CHROMA[VCA]
FE.CONT 2E
3E
4E
H.SW 5E
CH2.REC 6E
CH1.REC 7E
8E
PR.CONT 9E
C.SYNC 10E
OSD-EVE 11E
OSD-COUNT 12E
REC 13E
V.SYNC 14E
15E
GND(5V1) 16E
EVE.VIDEO 17E
PB 18E
ADDV+SQ 19E
HI.BAND 20E
HD 21E
ME/MP 22E
23E
SSB.DATA 24E
SSB.CLK 25E
TRICK 26E
CAM.LIN 27E
CAM.Y 1F
GND(CAM) 2F
CAM.C 3F
RD 4F
SD 5F
PB.SIG 1B
REC.FM 2B
FSC 3B
A.OUT.R 4B
A.IN.R 5B
GND(5V2) 6B
A.IN.L 7B
A.OUT.L 8B
3V1 1G
5V1 2G
GND(5V1) 3G
7G
GND(20P) 5G
+B(20P) 4G
VIDEO.OUT 8G
5V.OUT 6G
AV.CONT 26E
REMOTE 29E
REM.DATA 30E
S.EDIT 31E
32E
To SYSTEM CONTROL 1E-27E [P6-8]
To CAMERA PROCESS 1F-5F [P6-5]
To AUDIO 1B-8B [P6-14]
To DC-DC CONVERTER 1G-8G [P6-25]
To SYSTEM CONTROL 26E-32E [P6-8]
4
5
6
7
8
9
10
11
12

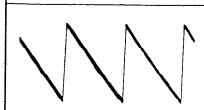
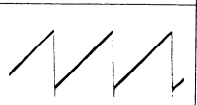
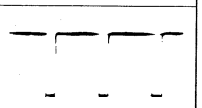
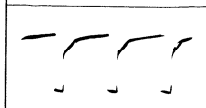
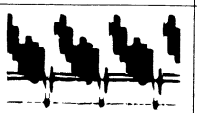
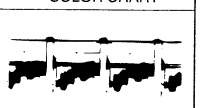
DC-DC CONVERTER [VCA] SCHEMATIC DIAGRAM



ELECTRONIC VIEWFINDER [EMQ] SCHEMATIC DIAGRAM



ELECTRONIC VIEWFINDER WAVEFORMS

1-A IC2001-4 870mVp-p 0.2V/5.0msec.cm COLOR CHART	2-A IC2001-8 2.2Vp-p 0.5V/5.0msec.cm COLOR CHART	3-A IC2001-9 1.9Vp-p 0.5V/20.0µsec.cm COLOR CHART
		
4-A IC2001-10 1.7Vp-p 0.5V/20.0µsec.cm COLOR CHART	5-A IC2001-15 1.0Vp-p 0.2V/20.0µsec.cm COLOR CHART	6-A IC2001-16 2.9Vp-p 1V/20.0µsec.cm COLOR CHART
		

IDENTIFICATION OF PARTS LOCATION

EMQ

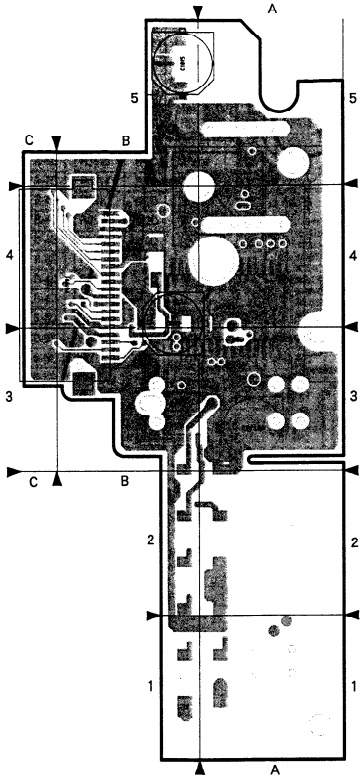
Symbol No.	Parts Location
C	
C2001	B-1B
C2002	B-2A
C2003	B-2A
C2004	A-2B
C2005	A-1A
C2006	A-2A
C2007	A-2A
C2008	B-2A
C2009	A-1A
C2011	A-2A
C2012	A-2B
C2013	A-4B
C2014	A-4B
C2015	A-3A
C2016	A-3A
C2017	B-1A
C2018	B-1A
D	
D2001	B-3A
D2002	A-1A
IC	
IC2001	A-4A
L	
L2001	B-3A
L2002	A-1B
PG	
PG2001	A-3B
PG2002	A-4A
Q	
Q2001	A-2B
Q2002	A-3A
R	
R2001	A-1B
R2002	A-2A
R2003	A-2A
R2004	A-2A
R2005	A-2A
R2006	A-1A
R2007	A-1A
R2008	A-2B
R2009	A-3B
R2011	A-2A
R2012	A-2B
R2013	A-3A
R2014	A-3A
R2015	A-4B
R2016	B-1A
R2017	A-3B
R2018	A-3A
R2019	A-3A
R2020	A-3A
R2021	B-1A
R2022	A-4A
R2024	A-2A
R2025	A-3A
R2026	B-1A
R2027	B-1A

Symbol No.	Parts Location
RT	
RT2001	A-2A
RT2002	A-3A
RT2003	B-1A
T	
T2001	A-1A
TF	
TF2001	B-2A

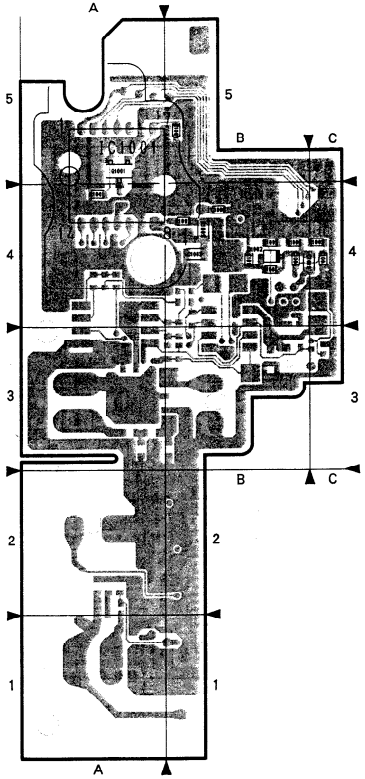
SE

Symbol No.	Parts Location
C	
C1002	A-4B
C1003	B-4B
C1004	B-4C
C1005	A-5B
C1006	B-4B
C1007	B-5B
C1008	B-4B
C1009	B-4B
C1010	B-4B
D	
D1002	B-4B
IC	
IC1001	B-5A
PG	
PG1001	A-4B
Q	
Q1001	B-5A
R	
R1001	B-4A
R1002	B-4B
R1003	B-4C
R1006	B-4B
R1009	B-4B

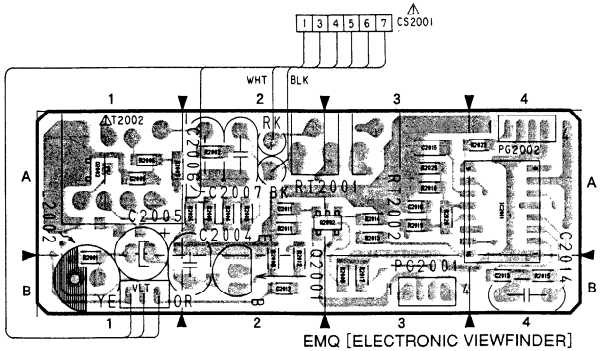
SE,EMQ,HTS9551C CIRCUIT BOARDS



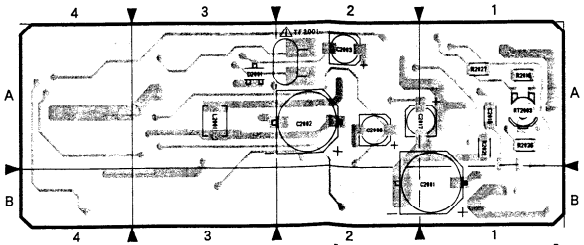
SE [SENSOR] —SIDE A—



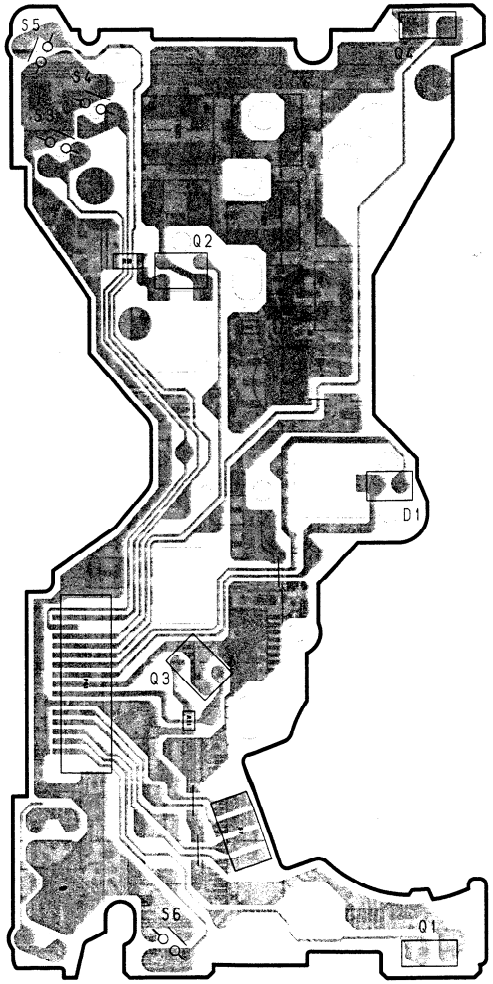
SE [SENSOR] —SIDE B—
[PATTERN No. JA1536-3]



EMQ [ELECTRONIC VIEWFINDER]
—SIDE A—

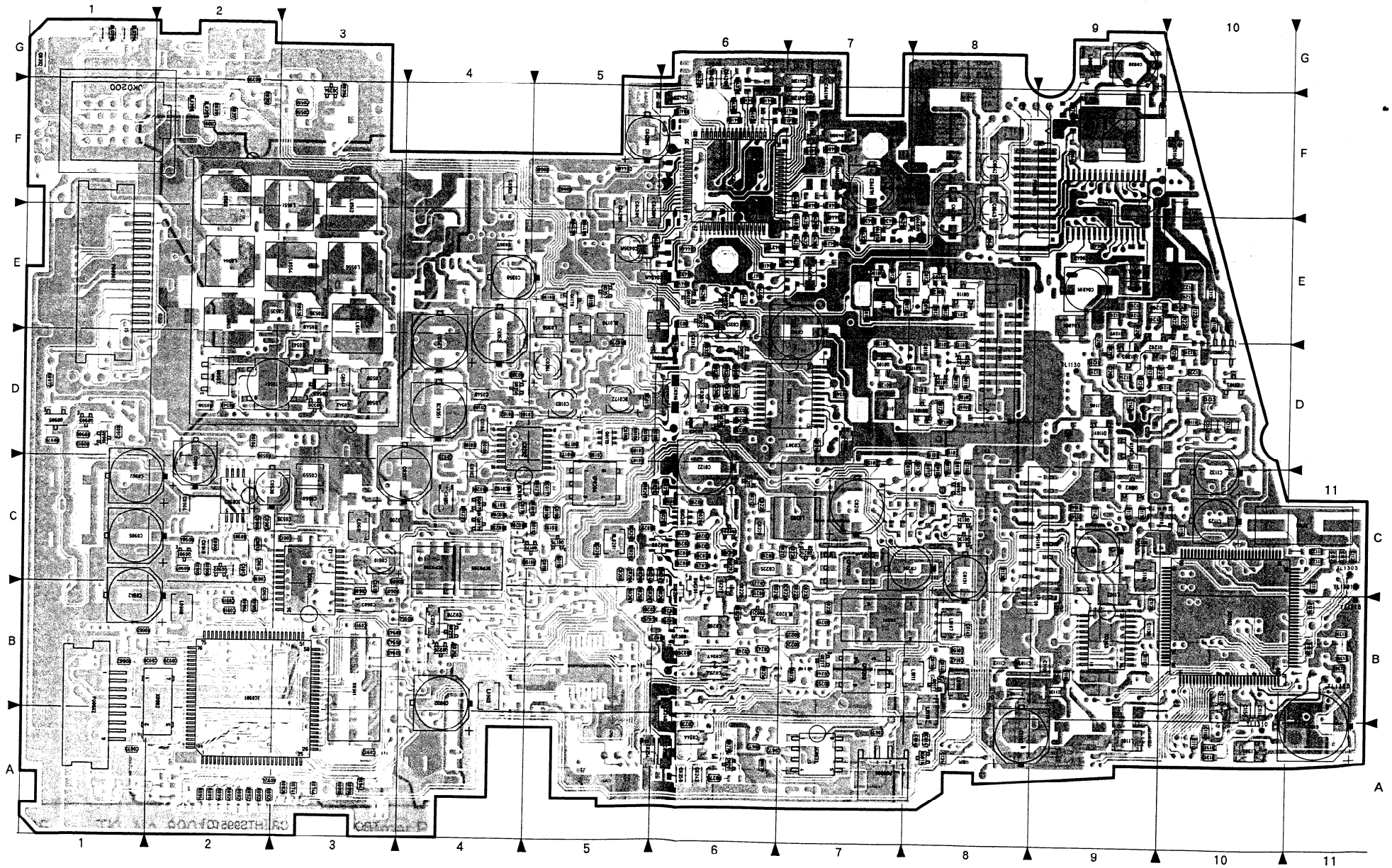


EMQ [ELECTRONIC VIEWFINDER]
—SIDE B—
[PATTERN No. 152035-3]



TROUBLE SENSOR [HTS9951C]
[PATTERN No. 155190-2]

VCA [MAIN] CIRCUIT BOARD – SIDE A –
[PATTERN No. JA1536-3]



DIFFERENCE TABLE

VCA -SIDE A-

NOTE: This table listes the different components marked with asterisks (★) in the circuit board diagrams.

SYMBOL No.	TYPE 650	TYPE 340/358
C0147	○	×
C0172	○	×
C0173	○	×
C0177	○	×
C0187	○	×
C0192	×	○
C0201	○	×
C0202	○	×
C0203	○	×
C0209	○	×
C0210	○	×
C0230	○	×
C0262	○	×
C0266	○	×
C0267	○	×
C0351	○	×
CP0205	○	×
CP0206	○	×
L0170	○	×
L0201	○	×
L0203	○	×
Q0116	○	×
Q0178	×	○
Q0179	×	○
Q0201	○	×
Q0202	○	×
Q0203	○	×
Q0204	○	×
Q0206	○	×
Q0210	○	×
Q0219	○	×
Q0221	○	×
R0177	×	JUMPER
R0197	×	JUMPER
R0200	JUMPER	×
R0201	○	×
R0202	○	×
R0204	×	JUMPER
R0207	○	×
R0213	○	×
R0237	×	○
R0238	×	○
R0243	○	×
R0247	○	×
R0248	○	×
R0265	○	×
R0266	×	JUMPER
R0269	×	JUMPER
R0270	○	×
R0273	×	○
R0274	○	×
R0278	×	○
R0279	×	JUMPER
R0280	×	○
R0281	×	○
R0292	○	×
R0293	○	×
R0294	○	×
R0297	×	JUMPER

IDENTIFICATION OF PARTS LOCATION

VCA 1/2

Symbol No.	Parts Location
#	
#0900	B-7F
BL	
BL0394	A-1G
BL0395	A-1G
BL0397	A-2F
BL0399	A-2F
C	
C0101	A-8D
C0102	A-7E
C0103	B-8E
C0104	B-8E
C0105	A-8D
C0106	A-8D
C0108	B-8D
C0109	B-8D
C0110	B-8D
C0111	A-8D
C0112	B-8D
C0113	B-8D
C0114	A-8D
C0115	A-8D
C0116	B-7E
C0117	B-8C
C0118	A-7E
C0119	A-8E
C0120	A-7E
C0121	A-8E
C0122	A-6C
C0130	B-8A
C0131	A-8C
C0132	B-7C
C0133	B-7A
C0134	B-7A
C0136	B-7A
C0137	B-7B
C0140	B-8B
C0141	A-8D
C0142	A-8B
C0143	B-8C
C0144	B-8C
C0145	B-7B
C0146	A-8A
C0147	A-8A
C0148	B-7B
C0149	A-8B
C0150	A-8B
C0151	A-8C
C0153	B-7C
C0154	B-7C
C0155	B-7C
C0156	A-7D
C0159	A-8B
C0161	B-8C
C0162	B-8D
C0164	B-7D
C0165	B-8C
C0168	B-5C
C0169	B-6D
C0170	B-5D
C0171	B-5D
C0172	A-5D
C0173	A-5D
C0174	B-5C
C0175	B-5B
C0176	B-5B
C0177	A-5C
C0178	A-4C
C0179	B-5D
C0180	A-4D
C0181	A-4D
C0182	A-4C
C0183	A-5D
C0184	A-4D
C0185	A-4C
C0187	A-4C
C0188	A-5D
C0189	A-5D
C0190	A-5C
C0191	A-5C
C0192	A-4C
C0193	B-5C
C0194	B-5C
C0195	A-5D
C0201	A-5C
C0202	A-5C
C0203	A-5C
C0204	B-5C
C0205	B-6B
C0206	B-5C
C0207	A-6C
C0208	A-6C
C0209	A-6C
C0210	A-6C
C0213	B-6C
C0214	B-6C
C0215	B-6C
C0216	A-7C
C0217	A-6C
C0218	B-7C
C0219	B-7B
C0221	B-7C
C0222	B-7C
C0223	A-6C
C0224	A-7C
C0225	A-6C
C0227	A-6C
C0228	A-6B
C0229	A-6C
C0230	A-7B
C0231	A-8C
C0232	A-7B
C0235	A-7B
C0237	B-7B
C0238	A-6A
C0240	A-7B
C0242	A-6A
C0243	A-6B
C0244	A-6A
C0245	A-6B
C0246	A-6A
C0247	A-6B
C0249	B-6B
C0250	A-6A
C0251	A-6A
C0252	A-6B
C0253	B-5B
C0254	A-5A
C0255	B-5B
C0256	B-6B
C0257	A-4C
C0258	B-4C
C0259	B-6B
C0260	B-6B
C0261	A-5B
C0262	A-5B
C0263	B-5B
C0264	A-5C
C0265	A-5C
C0266	A-6B
C0267	A-5B
C0270	A-4B
C0271	A-4B
C0272	B-3B
C0301	A-6D
C0302	A-6D
C0303	A-6D
C0304	B-6D
C0305	A-6D
C0306	A-7D
C0307	A-7D
C0308	A-6D
C0310	B-7D
C0312	B-6D
C0313	A-6E
C0314	A-6D
C0315	B-6D
C0316	A-6D
C0350	B-4D
C0351	A-4D
C0352	A-4E
C0353	A-4F
C0354	B-4D
C0355	B-4D
C0356	B-4E
C0357	A-4E
C0358	A-4E
C0359	B-5D
C0360	B-5E
C0362	B-5D
C0363	B-5D
C0364	A-5D
C0365	B-5D
C0368	B-5E
C0369	B-5D
C0391	A-2F
C0392	A-1G
C0401M	A-9E
C0402M	A-6F
C0403M	A-7E
C0404M	A-7F
C0406M	A-7F
C0407M	A-7F
C0408M	A-7F
C0409M	A-7F
C0410M	A-7F
C0411M	A-7F
C0412M	A-7F
C0413M	A-7G
C0414M	A-7F
C0415M	A-7F
C0416M	A-6F
C0418M	A-6F
C0419M	B-6E
C0420M	A-6G
C0421M	A-6G
C0422M	A-6G
C0423M	A-6F
C0428M	A-5F
C0429M	A-5E
C0430M	A-5F
C0431M	A-5F
C0432M	A-6E
C0433M	A-8F
C0434M	A-5E
C0435M	A-5E
C0436M	A-7E
C0437M	A-6E
C0438M	A-7E
C0439M	A-7E
C0440M	A-7E
C0442M	A-6E
C0444M	A-6F
C0446M	A-6E
C0447M	A-7E
C0448M	A-5F
C0501	B-3C
C0502	B-3C
C0503	B-3C
C0504	B-3C
C0505	B-2C
C0507	B-2C
C0508	B-2C
C0509	B-2C
C0510	B-2D
C0511	B-2D
C0513	B-2D
C0514	B-2D
C0516	B-2D
C0517	B-2D
C0518	B-3D
C0519	B-3D
C0520	B-3D
C0521	B-3D
C0522	B-3D
C0523	B-3D
C0524	B-3C
C0525	B-3C
C0527	B-2E
C0528	B-2F
C0529	B-3E
C0535	A-2E
C0536	A-2C
C0539	A-3C
C0540	B-2D
C0541	A-3D
C0542	A-3D
C0543	B-4D
C0544	B-3D
C0545	B-3E
C0546	B-3D
C0547	A-4D
C0548	A-4D
C0550	B-2E
C0551	B-2E
C0552	B-2E
C0555	A-3F
C0556	A-3F
C0559	A-3C
C0560	A-3C
C0601	B-3B
C0602	A-3B
C0603	B-3B
C0604	B-3B
C0605	A-3B
C0606	B-3C
C0607	B-3C
C0608	B-3C
C0609	B-3C
C0610	A-3C
C0611	B-3C
C0612	A-3C
C0613	A-2C
C0614	A-2C
C0615	B-3C
C0616	A-2C
C0617	B-2B
C0618	A-2B
C0619	A-3B
C0622	B-2B
C0635	B-9F
C0636	B-9F
C0637	B-9F
C0638	B-9F
C0641	A-9F
C0642	A-8F
C0643	A-8F
C0645	A-8E
C0647	A-9E
C0648	A-9E
C0649	B-9E
C0650	B-9E
C0651	B-9E
C0652	B-9E
C0671	A-7A
C0672	A-6A
C0673	A-1A
C0691	B-2B
C0692	B-2B
C0693	B-1B
C0694	B-2B
C0695	B-2B
C0696	B-1B
C0902	A-1C
C0904	A-2C
C0905	A-1C
C0906	A-2C
C0907	A-2C
C0908	A-2C
C0909	A-2C
C0910	B-2A
C0911	A-3B
C0912	A-3A
C0913	A-2C
C0914	B-3B
C0915	B-3B
C0916	B-3B
C0917	B-3B
C0918	A-2B
C0919	A-2B
C0923	A-4D
C0924	B-4C
C0925	B-4C
C0928	A-2B
C0929	A-2B
C0930	B-2A
C0932	A-4B
C0939	A-9G
C0942	A-1B
C0999	A-9F
C1101	A-9B
C1102	A-8A
C1103	B-8B
C1104	B-8B
C1105	B-8B
C1106	B-8B
C1107	A-8B
C1108	B-9B
C1109	B-9B
C1112	A-8B
C1113	A-10B
C1114	A-10B
C1115	B-10B
C1116	B-10B
C1117	B-10B
C1118	B-10B
C1119	A-11C
C1120	A-11C
C1121	A-11C
C1123	A-10C
C1125	B-10C
C1126	B-10C
C1127	B-10C
C1128	B-10C
C1129	A-9B
C1130	A-10E
C1131	B-11C
C1132	A-10C
C1135	A-9C
C1136	A-9B
C1139	B-10C
C1141	B-9B
C1142	B-9C
C1143	A-9D
C1144	B-10D
C1145	B-10D
C1146	B-10C
C1147	B-10D
C1148	A-10D
C1149	A-10D
C1150	A-8B
C1151	A-9B
C1155	A-10B
C1156	B-9E
C1159	B-11C
C1160	A-8C
C1161	A-9C
C1163	A-10A
C1166	A-10E
C1167	B-10C
C1169	B-9C
C1171	A-11C
C1172	B-10B
C1173	B-11C
C1201	B-10E
C1202	B-9E
C1203	A-10F
C1204	B-9E
C1205	A-9E
C1206	A-9E
C1207	A-9E
C1208	A-9E
C1209	A-9D
C1210	A-10D
C1211	A-9D
C1212	B-10D
C1213	A-10D
C1301	A-11A
C1302	A-11B
C1303	B-11B
C1304	B-11B
C1305	B-10D
C1311	B-11B
C1314	A-8A
CP	
CP0202	A-7C
CP0203	A-7B
CP0204	A-5C
CP0205	A-4C
CP0206	A-4C
CP1101	A-10C
D	
D0101	B-6E
D0102	B-8C
D0201	A-6A
D0301	A-6D
D0302	B-6D
D0303	A-6D
D0305	B-5E
D0352	B-5D
D0394	A-3F
D0401M	B-8F
D0406M	B-6E
D0551	B-3E
D0552	A-3D
D0553	A-3D
D0601	B-2A
D0901	B-2A
D0902	B-6E
D1101	A-9D
D1103	A-10D
D1104	A-10F
D1301	B-10D
F	
F0551	B-2F
F0552	B-2E
IC	
IC0101	B-8E
IC0102	B-8B
IC0201	B-7B
IC0202	A-4D
IC0203	B-5D
IC0204	B-4D
IC0301	A-7D
IC0401	A-6F
IC0551	B-2D
IC0601	A-3C
IC0631	A-9F
IC0671	A-7A
IC0901	A-2B
IC0902	A-2C
IC0904	B-4C
IC0907	A-9F
IC1101	B-8B
IC1102	A-10B
IC1103	A-9B
IC1104	B-9C
IC1105	B-9B
IC1106	A-10D
IC1201	B-9E
IC1301	B-11B
JK	
JK0200	B-1F
L	
L0101	A-7D
L0102	A-7E
L0103	A-8F
L0104	B-7C
L0105	B-7A
L0107	A-8B
L0108	A-8B
L0109	B-8C
L0110	A-8B
L0111	A-8B
L0112	B-8D
L0170	A-5E
L0171	A-5E
L0172	B-5C
L0173	B-5C
L0201	A-5C
L0202	A-7C
L0203	A-7B
L0204	B-5B
L0205	A-6B
L0206	A-3C
L0207	B-4B
L0301	A-6E
L0350	A-5E
L0401M	A-9E
L0403M	B-7E
L0551	A-3F
L0552	A-3F
L0554	A-3E
L0556	A-3F
L0559	A-3D
L0560	A-3D
L0561	A-3E
L0563	A-2F
L0564	A-2E
L0565	A-2E
L0566	B-3E
L0601	A-3C
L0902	B-4C
L0903	A-4B
L0904	B-1D
L0906	A-9G
L0908	A-2B
L1101	A-9A
L1102	A-9B
L1103	B-10C
L1104	A-9C
L1105	A-10D
L1106	A-9D
L1109	A-9C
L1301	A-10A
PG	
PG0101	A-8D
PG0401L	B-8F
PG0551	B-3F
PG0601	B-5F
PG0602	A-1A
PG0603	A-9F
PG0604	A-7A
PG0901	A-1E
PG0902	B-7A
PG0903	B-6A
PG1101	A-9C
PG1103	B-1B
PG1301	B-10B
Q	
Q0101	A-8D
Q0102	B-8D
Q0103	B-8E
Q0104	A-8D
Q0105	A-7D
Q0106	A-8D
Q0107	A-8C
Q0108	A-7E
Q0109	A-8E
Q0110	A-8E
Q0111	B-7A
Q0112	B-7A
Q0116	A-8A
Q0117	A-8B
Q0120	B-7C
Q0121	B-7C
Q0122	B-7D
Q0123	B-8C
Q0130	A-8C
Q0131	A-8C
Q0140	B-7B
Q0170	A-5E
Q0171	B-5C
Q0173	A-5D
Q0175	A-5C
Q0176	A-5C
Q0178	A-4C
Q0179	A-4C
Q0201	A-6C
Q0202	A-6C
Q0203	A-6C
Q0204	A-6C
Q0206	A-6C
Q0208	B-6C
Q0209	B-6C
Q0210	A-6B
Q0211	B-6C
Q0212	B-7C
Q0213	B-7C
Q0215	A-6C
Q0216	A-7C
Q0217	A-7B
Q0219	A-6B
Q0221	A-6B
Q0224	B-4B
Q0225	A-4B
Q0226	A-4B
Q0228	B-3B
Q0229	B-4B
Q0231	B-4C
Q0232	B-4C
Q0233	B-4C
Q0301	A-6D
Q0302	A-6E
Q0303	B-7D
Q0305	A-6D
Q0306	B-6D
Q0307	B-6D
Q0308	B-6D
Q0309	B-6D
Q0350	B-4D
Q0352	B-4E
Q0356	B-4E
Q0357	A-5E
Q0358	A-4D
Q0360	B-5E
Q0361	B-5E
Q0362	B-5E
Q0363	B-5E
Q0364	B-5E
Q0365	B-5D
Q0366	B-5D
Q0367	B-5E
Q0368	B-5D
Q0401M	A-8E
Q0402M	A-6E
Q0403M	A-6E
Q0405M	A-7E
Q0551	B-3F
Q0553	B-2E
Q0557	A-2D
Q0558	A-3D
Q0559	B-3D
Q0561	B-2E
Q0562	B-2E
Q0601	B-3C
Q0602	B-3C
Q0603	B-3C
Q0604	B-2C
Q0901	A-2C
Q0902	A-2C
Q0903	A-1D
Q0904	A-1D
Q0905	A-1D
Q0907	B-3A
Q0909	B-3A
Q1101	B-10C
Q1102	A-9C
Q1103	A-9D
Q1108	B-9D
Q1201	B-10E
Q1202	A-9D
Q1203	A-9D
R	
R0101	B-8E
R0102	B-8E
R0103	B-8D
R0104	B-8D
R0105	A-8C
R0106	B-8D
R0107	B-8D
R0108	B-8D
R0109	B-8D
R0110	B-7D
R0111	B-7E
R0112	A-8C
R0113	A-8D
R0114	A-8D
R0115	A-8D
R0116	A-8C
R0119	A-8D
R0120	A-8D
R0121	A-8E
R0122	A-8E
R0123	A-8E
R0124	A-8E
R0125	A-7E
R0126	B-8C
R0127	A-8D
R0128	A-8D
R0129	A-7D
R0130	A-7D
R0132	A-8C
R0133	B-7C
R0134	B-8C
R0135	B-8C
R0137	B-7C
R0138	B-7B
R0140	B-7B
R0141	B-7B
R0142	B-7B
R0143	B-7A
R0144	B-7A
R0145	B-7A
R0146	B-7A
R0147	B-8B
R0148	B-7A
R0149	B-8A
R0150	B-8C
R0151	B-8C
R0152	B-8B
R0153	B-7C
R0154	B-7C
R0155	B-8C
R0156	A-8C
R0157	B-7C
R0158	B-7C
R0159	B-8D
R0160	B-8C
R0161	B-8C
R0162	B-7C
R0163	B-7B
R0164	B-7B
R0165	A-8C
R0167	B-7D
R0168	B-5C
R0169	B-5D
R0170	B-5C
R0171	B-5C
R0172	B-5C
R0173	B-5C
R0174	B-5B
R0175	B-5C
R0176	A-4C
R0177	A-5D
R0179	A-5D
R0180	A-4D
R0181	A-4D
R0182	A-4D
R0183	B-5C
R0184	A-5D
R0185	A-6D
R0186	A-5D
R0187	A-5D
R0188	B-5D
R0190	A-5C
R0191	A-5C
R0192	A-5C
R0193	A-5C
R0194	B-4C
R0196	A-5C
R0197	A-5C
R0198	A-5E
R0199	A-5E
R0200	A-4C
R0201	A-6C
R0202	A-6C
R0203	B-6C
R0204	A-6C
R0205	B-6C
R0206	B-6C
R0207	A-5C
R0208	B-5B
R0209	B-6C
R0211	B 5C
R0212	A-6C
R0213	A-6B
R0215	A-6B
R0216	A-6C
R0217	A-7C
R0218	A-6B
R0219	A-7B
R0222	A-7B
R0223	A-7B
R0224	A-7B
R0228	A-7B
R0230	B-7C
R0231	B-7C
R0233	B-6B
R0237	A-4C
R0238	A-4C
R0239	B-6B
R0240	B-6B
R0241	B-6B

IDENTIFICATION OF PARTS LOCATION

VCA 2/2

Symbol No.	Parts Location
R0243	A-6B
R0244	B-5B
R0245	B-3C
R0246	B-5B
R0247	A-6C
R0248	A-5C
R0249	B-5C
R0250	B-6B
R0251	B-7C
R0252	B-7C
R0253	A-7B
R0254	A-6B
R0255	B-4B
R0257	B-4B
R0258	B-4B
R0259	B-4B
R0260	B-4C
R0261	A-4B
R0263	B-4B
R0265	A-6C
R0266	A-6B
R0267	A-5B
R0268	A-5B
R0269	A-5C
R0270	A-6B
R0271	B-4B
R0272	B-4C
R0273	A-6B
R0274	A-6C
R0275	A-6A
R0276	A-6A
R0278	A-5C
R0279	A-5D
R0280	A-4C
R0281	A-4C
R0292	A-6C
R0293	A-6C
R0294	A-6C
R0295	A-6C
R0296	A-6C
R0297	A-5C
R0298	A-6C
R0299	B-6C
R0302	A-6D
R0303	B-6D
R0305	A-6D
R0310	A-7D
R0311	B-6E
R0313	B-6D
R0314	B-6D
R0316	A-6E
R0317	A-6D
R0318	B-6D
R0319	B-6D
R0324	A-6D
R0325	A-6D
R0327	A-6D
R0328	B-6D

Symbol No.	Parts Location
R0330	B-6D
R0333	B-6D
R0334	B-6D
R0335	B-6D
R0337	B-4E
R0339	A-6D
R0340	A-7D
R0350	B-4D
R0351	B-4D
R0355	B-4E
R0356	B-4E
R0357	B-4D
R0359	B-4D
R0364	B-5D
R0366	B-5E
R0371	B-5E
R0373	B-5D
R0374	B-4E
R0382	B-5E
R0383	A-4D
R0384	B-5D
R0390	A-2G
R0391	A-2F
R0392	A-2F
R0394	A-3F
R0397	A-2F
R0399	B-4E
R0401M	A-7F
R0402M	A-7F
R0405M	A-7F
R0410M	A-6F
R0412M	A-6F
R0414M	A-6E
R0417M	A-6E
R0419M	A-6E
R0420M	A-7E
R0421M	A-7E
R0422M	A-7E
R0423M	A-7E
R0424M	A-7E
R0425M	B-6E
R0426M	A-6F
R0427M	B-5E
R0429M	A-7E
R0430M	A-7E
R0431M	A-7E
R0432M	A-7E
R0436M	A-6F
R0437M	A-6G
R0441M	A-5E
R0443M	A-5E
R0459M	A-5E
R0463M	B-7E
R0501	B-3C
R0502	B-3C
R0504	A-2D
R0505	B-2C
R0506	A-2D

Symbol No.	Parts Location
R0507	B-2C
R0508	B-2C
R0510	B-2C
R0511	B-2D
R0512	B-2D
R0513	B-2D
R0514	B-2D
R0516	B-2D
R0517	B-2D
R0518	B-3D
R0519	B-3D
R0522	B-3D
R0525	B-3C
R0529	B-3E
R0530	B-3F
R0531	B-3F
R0532	B-3E
R0536	A-3E
R0539	A-3E
R0540	A-3E
R0541	A-3D
R0549	A-2D
R0550	A-2D
R0551	B-2D
R0552	B-2D
R0555	B-3D
R0556	B-3D
R0558	B-3D
R0561	B-1E
R0562	B-2E
R0566	B-1E
R0567	B-2E
R0583	B-6D
R0601	B-3B
R0602	B-3B
R0603	B-3B
R0606	B-3B
R0607	A-3B
R0608	B-3C
R0609	A-3C
R0610	B-3B
R0611	B-3C
R0612	B-3C
R0613	B-3B
R0614	B-3C
R0616	B-3C
R0619	B-3B
R0620	B-3C
R0621	B-2C
R0622	B-3B
R0623	B-2C
R0624	B-2B
R0626	B-2B
R0640	B-9E
R0641	B-9F
R0642	B-9F
R0643	A-9E
R0644	A-9E

Symbol No.	Parts Location
R0662	A-1B
R0663	A-1B
R0671	A-6A
R0672	A-6A
R0681	A-5F
R0682	A-5F
R0691	B-2B
R0692	B-2B
R0693	B-1B
R0694	B-2B
R0695	B-2B
R0696	B-1B
R0701	B-3A
R0702	A-9F
R0704	B-2A
R0706	B-1C
R0707	B-1C
R0708	B-1C
R0721	B-1E
R0722	B-1D
R0723	B-1D
R0724	B-1D
R0725	B-1D
R0728	B-5B
R0729	B-5B
R0739	B-2B
R0740	B-2B
R0741	A-3A
R0743	B-3A
R0744	A-3A
R0746	B-3B
R0751	B-2B
R0752	B-2B
R0901	A-2C
R0903	A-2C
R0904	A-2C
R0905	A-2C
R0906	A-2C
R0907	A-2C
R0908	A-1D
R0909	B-1D
R0912	A-1D
R0913	A-1D
R0914	A-2A
R0915	A-2A
R0916	A-2A
R0917	B-2A
R0918	B-2A
R0919	B-2A
R0920	A-2A
R0921	A-2A
R0922	A-2A
R0923	A-2A
R0924	A-2A
R0925	A-2A
R0926	A-3A
R0927	B-2A
R0928	B-2A

Symbol No.	Parts Location
R0929	B-2A
R0930	B-2A
R0931	B-2A
R0932	B-2A
R0933	B-2A
R0934	B-3A
R0935	B-2A
R0938	B-2A
R0941	A-3A
R0942	A-3B
R0943	A-3B
R0944	B-4D
R0945	A-3B
R0947	D-3B
R0948	B-1C
R0949	B-1C
R0950	B-2B
R0951	B-3B
R0952	B-2B
R0953	B-2B
R0954	A-4B
R0955	B-3B
R0957	B-4B
R0958	B-3B
R0961	B-2A
R0962	B-2A
R0963	B-4B
R0964	B-2B
R0966	B-2B
R0969	B-3B
R0971	B-4D
R0972	B-3B
R0974	B-2B
R0975	B-4C
R0976	A-1D
R0977	A-1D
R0978	B-2B
R0979	B-2B
R0980	B-2C
R0981	B-2C
R0982	B-2C
R0983	B-2C
R0984	A-2B
R0985	A-2B
R0992	B-7E
R0994	A-3A
R0995	A-3A
R0996	B-4C
R0998	B-3B
H0999	B-4D
R1101	B-9B
R1102	A-9B
R1112	A-9B
R1113	A-10A
R1114	A-11B
R1115	B-9B
R1116	B-9B
R1117	B-9B

Symbol No.	Parts Location
R1118	B-10B
R1119	B-10B
R1120	B-10B
R1121	A-11B
R1122	A-11C
R1123	A-11C
R1124	A-9C
R1126	B-10C
H1127	B-10C
R1128	B-10C
R1129	B-10C
R1130	B-11C
R1131	A-10C
R1132	A-9C
R1133	A-9D
R1136	A-8C
R1137	B-11C
R1141	B-9C
R1142	B-9D
R1143	B-9C
R1145	A-9C
R1146	A-9C
R1147	A-9C
R1148	B-9C
R1149	B-9D
R1150	B-9D
H1151	B-10D
R1152	B-10D
R1155	B-10D
R1156	B-10D
R1157	B-10C
R1158	B-10C
R1159	B-2B
R1160	B-2B
R1161	B-2B
R1162	B-2B
R1163	D-2D
R1175	A-9C
R1201	B-10E
R1202	A-9E
R1203	A-9E
R1204	A-10E
R1205	A-9E
R1206	A-9E
R1207	A-9D
R1208	B-9D
R1209	B-9D
R1210	B-9E
R1211	A-9D
R1212	A-9D
R1213	A-10D
R1214	A-9D
R1215	A-9D
R1216	A-10D
R1218	A-9D
R1220	A-10D
R1221	A-10E
R1222	A-10E

Symbol No.	Parts Location
R1223	B-9E
R1224	A-10E
R1225	A-10E
R1303	B-10D
R1308	B-9C
R1309	B-9C
R1310	B-9C
R1311	B-10C
R1312	A-10A
R1313	A-10A
R1314	A-11B
R1315	A-11B
RT	
RT0103	B-7A
RT0202	B-6C
RT0203	B-6C
RT0204	B-5B
RT0205	B-5B
RT0206	B-5C
RT0207	B-5C
RT0209	B-6B
RT0210	B-4C
RT0211	B-5D
RT0212	B-5C
RT0214	B-5C
RT0215	B-6C
RT0216	B-5C
RT0217	B-5B
RT0302	B-7D
SW	
SW0902	B-1D
SW0903	B-1D
SW0904	B-1C
SW0905	B-1D
SW0906	B-3A
T	
T0551	A-2D
TL	
TL1130	A-9D
TL1133	B-2B
TL1135	B-11C
TL1213	B-11A
TL1301	A-11C
TL1303	A-11C
TL1305	B-10B
TL1306	B-11A
TL1307	B-11A
TL1308	B-10B
TL1309	B-10C
TL1310	A-10A
TL1311	B-10B
TL1312	B-10B
TL1313	B-9B
TL1314	B-8C
TL1315	A-11B
TL1325	A-11B
TP	
TP0101	B-7C

Symbol No.	Parts Location
TP0103	B-8B
TP0201	B-7B
TP0202	B-6D
TP0203	B-7B
TP0204	B-6B
TP0205	B-6C
TP0206	B-6C
TP0207	B-4C
TP0301	B-6D
TP0401	B-8F
X	
X0201	A-7B
X0901	A-3B
X0902	A-2B
X1101	A-11C

DIFFERENCE TABLE

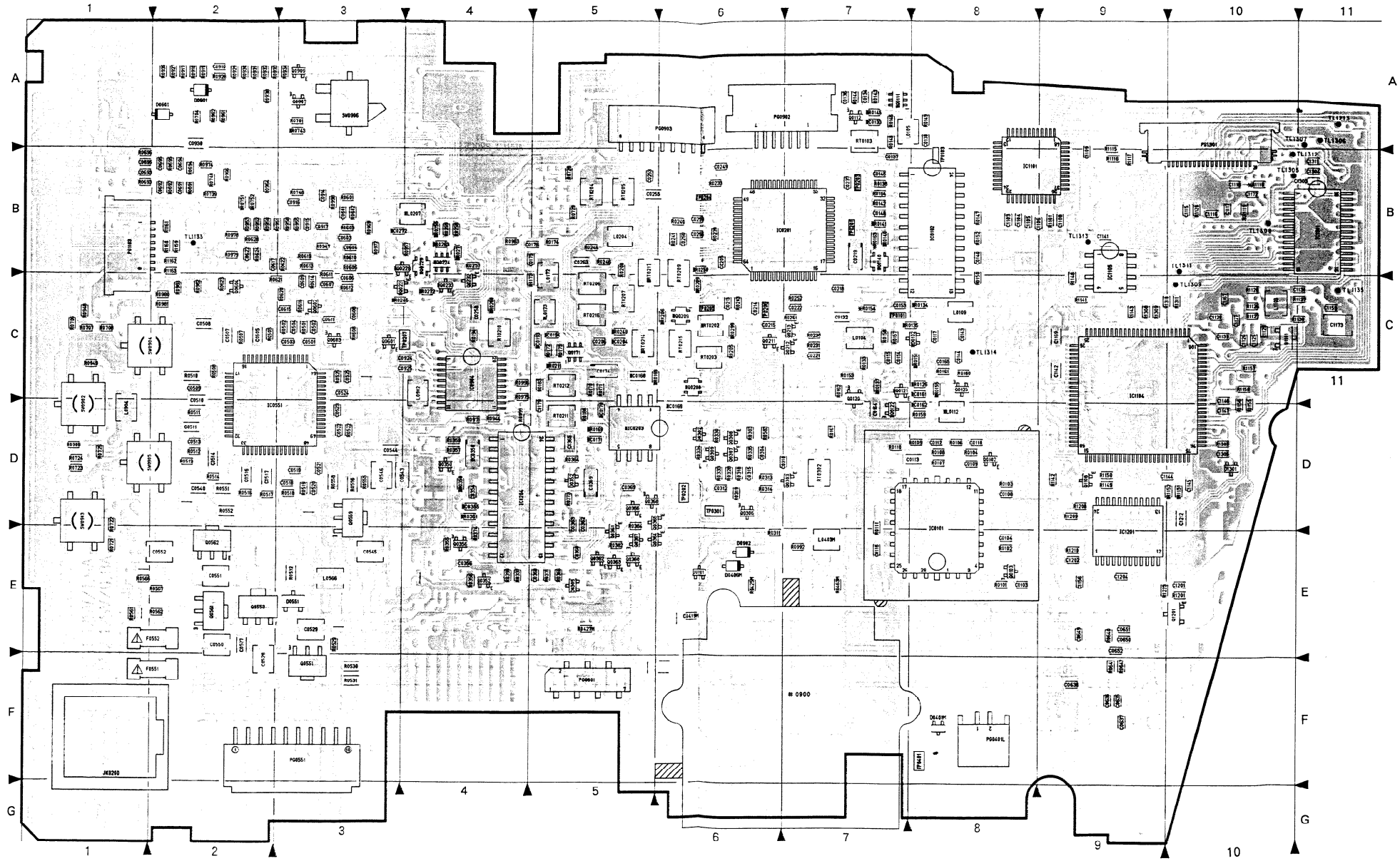
VCA -SIDE B-

NOTE: This table listes the different components marked with asterisks (*) in the circuit board diagrams.

SYMBOL No.	TYPE 650	TYPE 340/358
C0133	○	×
C0161	○	×
C0162	○	×
C0168	○	×
C0169	○	×
C0170	○	×
C0171	○	×
C0193	×	○
C0194	JUMPER	○
C0204	○	×
C0272	○	×
C0350	○	×
C0355	○	×
D0102	○	×
IC0203	○	×
L0112	○	×
L0173	×	○
L0207	○	×
Q0111	○	×
Q0121	○	×
Q0122	○	×
Q0140	○	×
Q0208	○	×
Q0209	○	×
Q0224	○	×
Q0228	○	×
Q0229	○	×
Q0231	○	×
Q0233	○	×
R0126	○	×
R0134	×	○
R0135	JUMPER	×
R0137	○	×

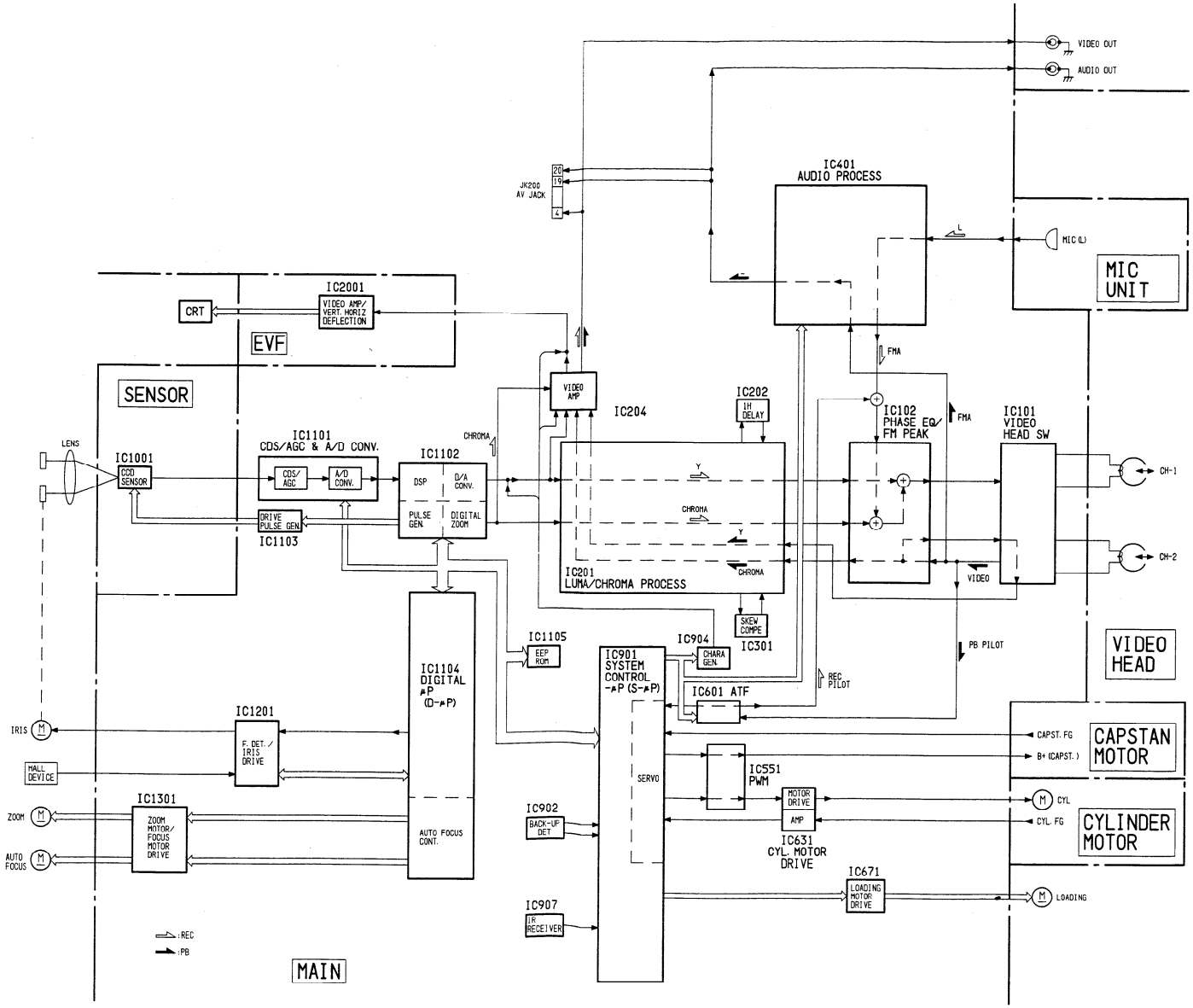
SYMBOL No.	TYPE 650	TYPE 340/358
R0140	JUMPER	×
R0141	○	JUMPER
R0145	○	×
R0151	○	×
R0154	×	○
R0155	×	JUMPER
R0163	○	×
R0168	○	×
R0169	JUMPER	×
R0206	×	JUMPER
R0209	○	×
R0211	×	JUMPER
R0245	○	×
R0249	×	JUMPER
R0250	×	○
R0255	○	×
R0260	○	×
R0263	×	JUMPER
R0271	○	×
R0272	○	×
R0299	○	×
R0350	○	×
R0351	○	×
R0743	○	×
R0751	○	×
R0752	×	○
R1118	○	JUMPER
R1119	○	JUMPER
R1151	JUMPER	×
R1152	×	JUMPER
RT0202	○	×
RT0214	○	×
RT0217	○	×

VCA [MAIN] CIRCUIT BOARD – SIDE B –
[PATTERN No. JA1536-3]

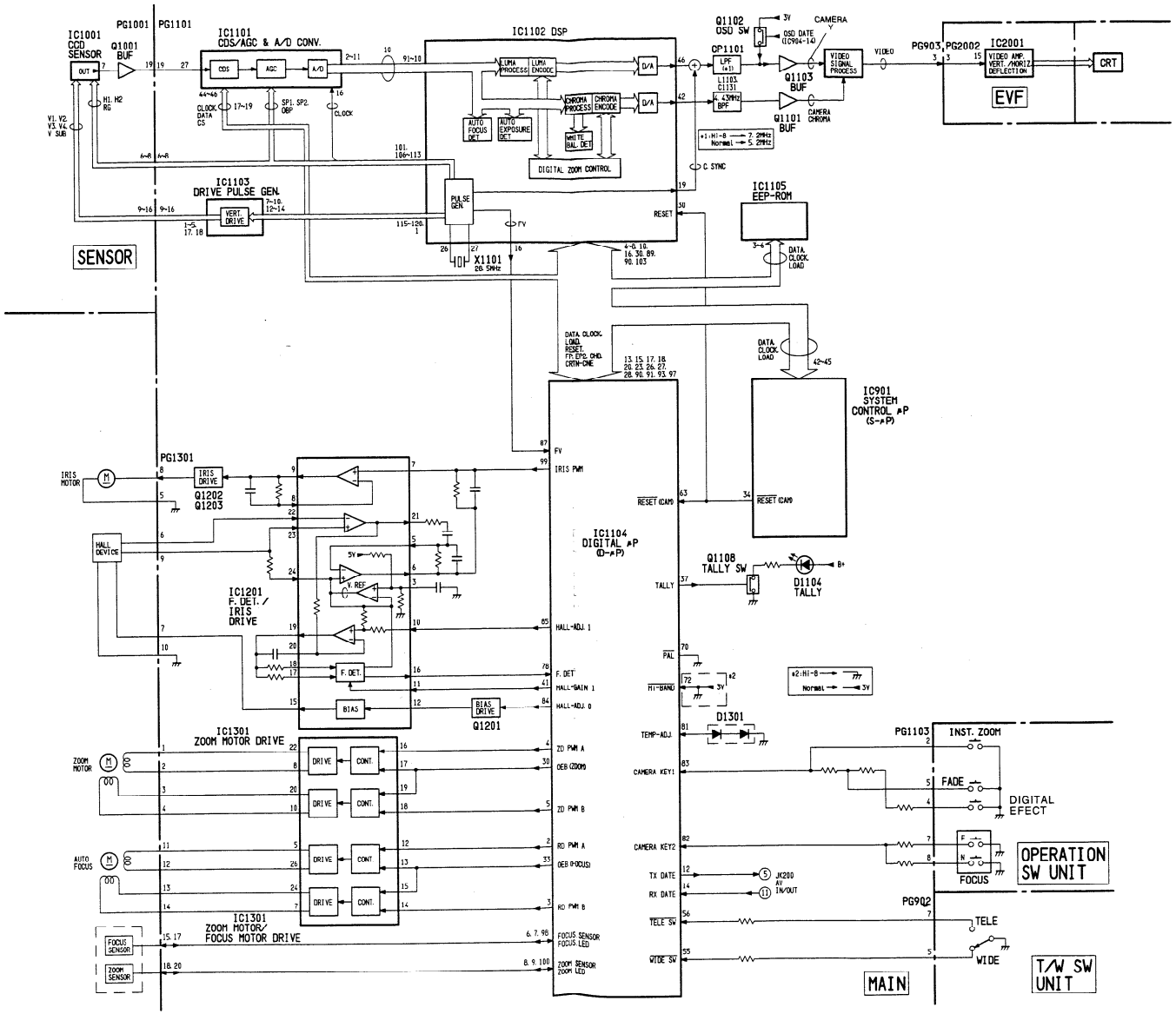


BLOCK DIAGRAMS

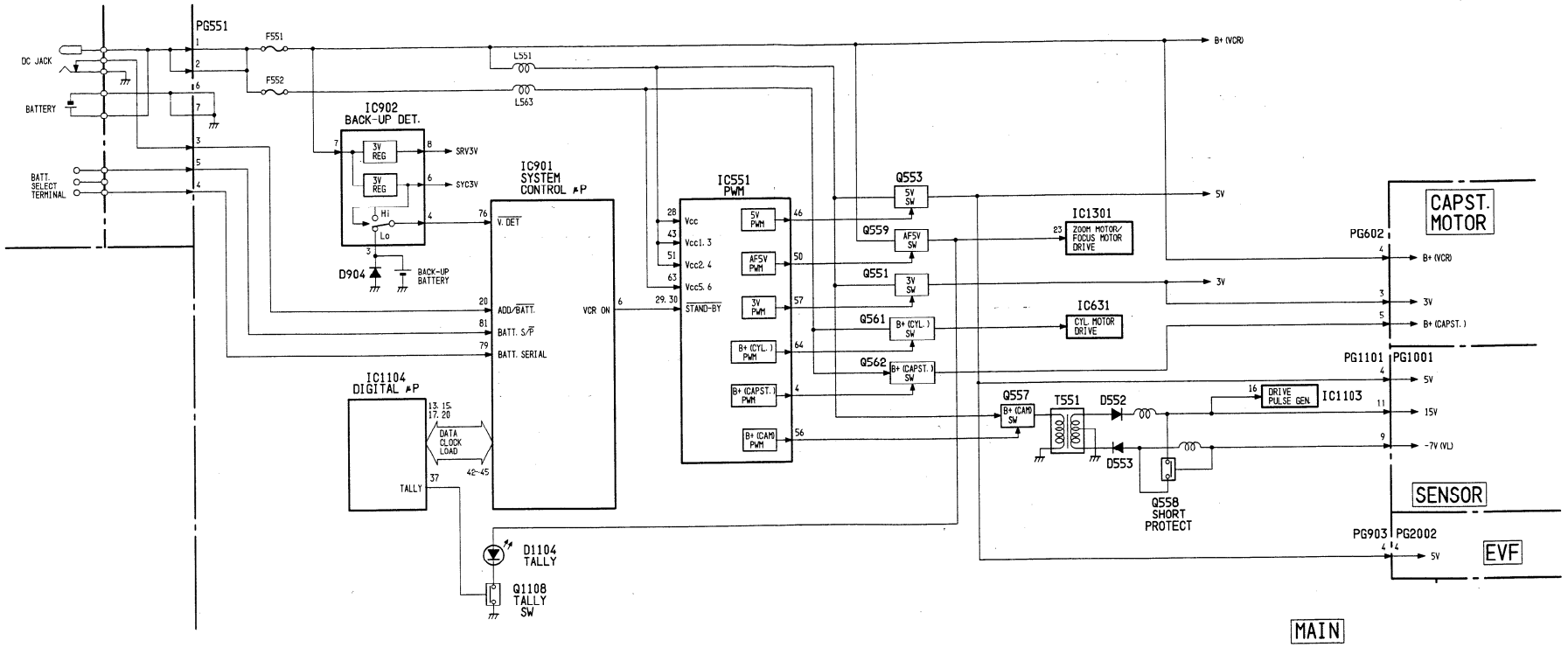
1. OVERALL

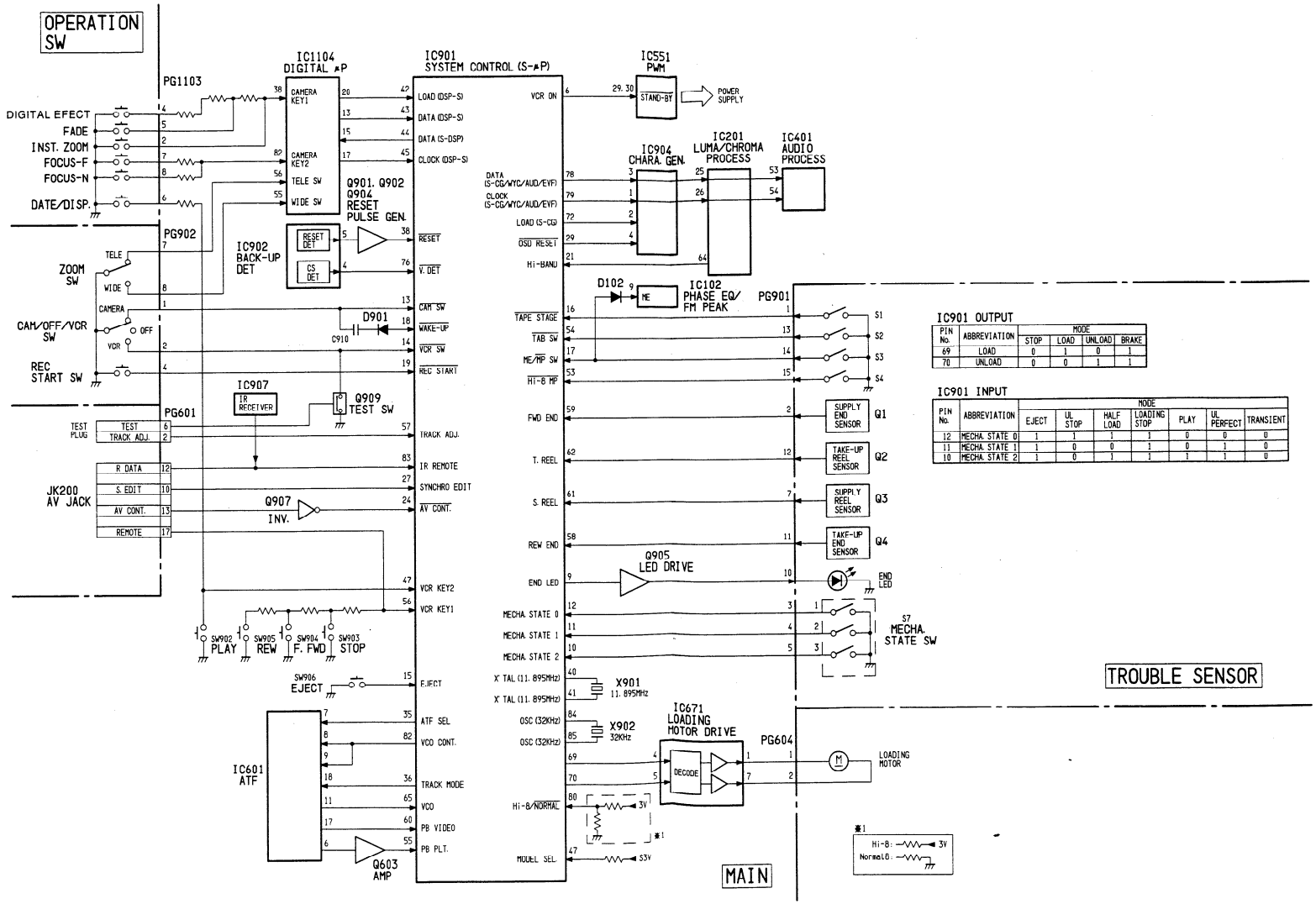


2. CAMERA


SENSOR
IC1001 CCD SENSOR
Q1001 BUF
PG1001 PG1101
IC1101 CDS/AGC & A/D CONV.
IC1102 DSP
Q1102 OSD SW
CAMERA
PG903, PG2002
IC2001
VIDEO AMP, VERT./HORIZ. DEFLECTION
CRT
EVF
Q1103 BUF
Q1101 BUF
IC1103 DRIVE PULSE GEN.
IC1105 EEP-ROM
X1101 26.5MHz
IC901 SYSTEM CONTROL ▲P (S-▲P)
IC1104 DIGITAL ▲P (D-▲P)
PG1301
IRIS MOTOR
IRIS DRIVE
Q1202 Q1203
HALL DEVICE
IC1201 F. DET./ IRIS DRIVE
Q1201
Q1108 TALLY SW
D1104 TALLY
D1301
IC1301 ZOOM MOTOR DRIVE
ZOOM MOTOR
AUTO FOCUS
IC1301 ZOOM MOTOR/ FOCUS MOTOR DRIVE
FOCUS SENSOR
ZOOM SENSOR
PG1103
INST. ZOOM
FADE
DIGITAL EFECT
OPERATION SW UNIT
FOCUS
PG902
TELE
WIDE
T/W SW UNIT
MAIN

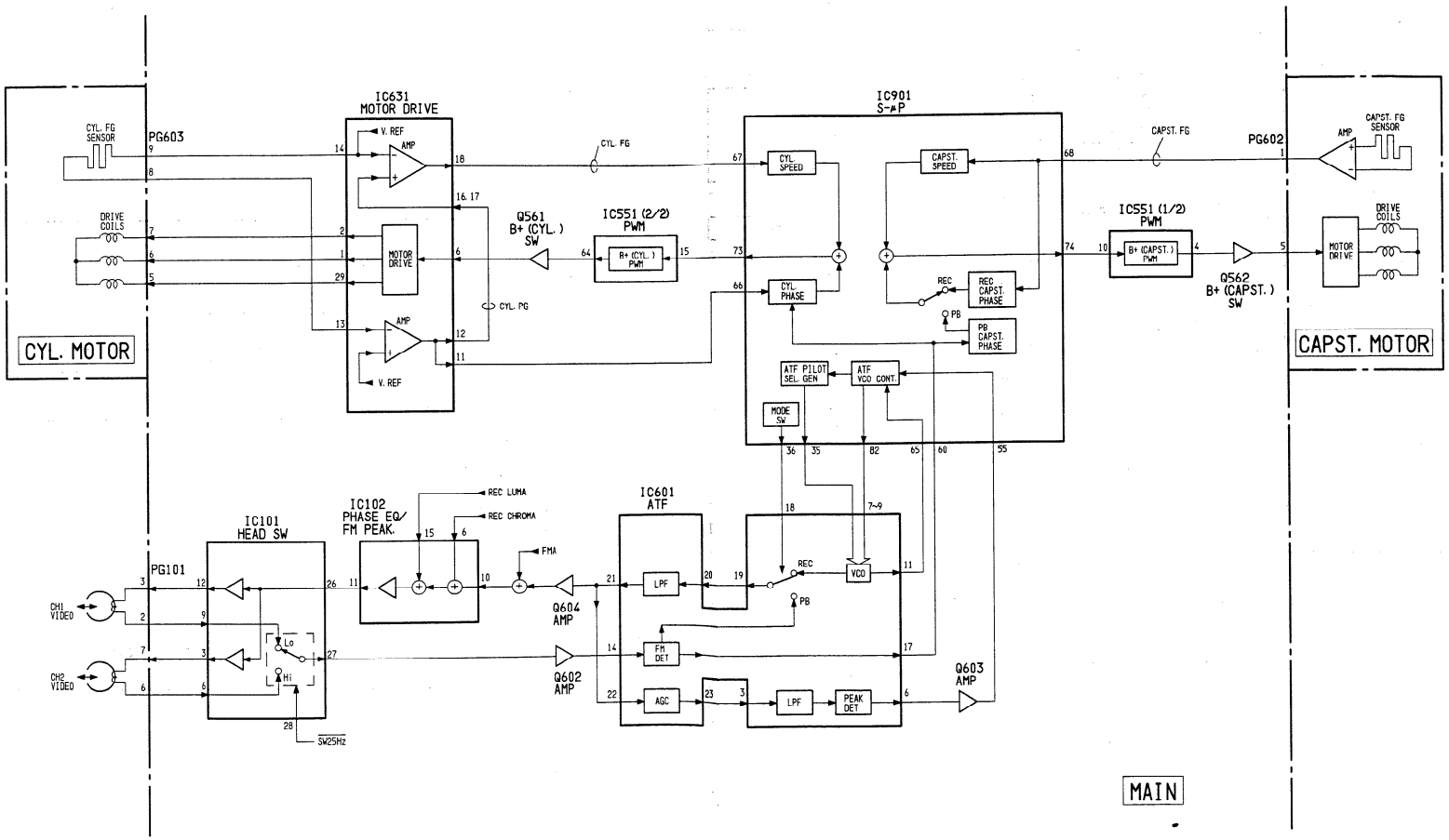
3. POWER


PG551
DC JACK
BATTERY
BATT. SELECT TERMINAL
F551
F552
L551
L563
B+ (VCR)
IC902
BACK-UP DET.
3V REG
3V REG
Hi
Lo
SRV3V
SYC3V
D904
BACK-UP BATTERY
IC901
SYSTEM CONTROL
V. DET
ADD/BATT.
BATT. S/P
BATT. SERIAL
VCR ON
IC1104
DIGITAL
DATA
CLOCK
LOAD
TALLY
42-45
IC551
PWM
Vcc
Vcc1. 3
Vcc2. 4
Vcc5. 6
STAND-BY
5V PWM
AF5V PWM
3V PWM
B+ (CYL.) PWM
B+ (CAPST.) PWM
B+ (CAM) PWM
Q553
5V SW
Q559
AF5V SW
Q551
3V SW
Q561
B+ (CYL.) SW
Q562
B+ (CAPST.) SW
Q557
B+ (CAM) SW
T551
D552
D553
Q558
SHORT PROTECT
IC1301
ZOOM MOTOR/ FOCUS MOTOR DRIVE
IC631
CYL. MOTOR DRIVE
IC1103
DRIVE PULSE GEN.
5V
3V
15V
-7V (VL)
PG602
PG1101
PG1001
PG903
PG2002
CAPST. MOTOR
SENSOR
EVF
D1104
TALLY
Q1108
TALLY SW
MAIN

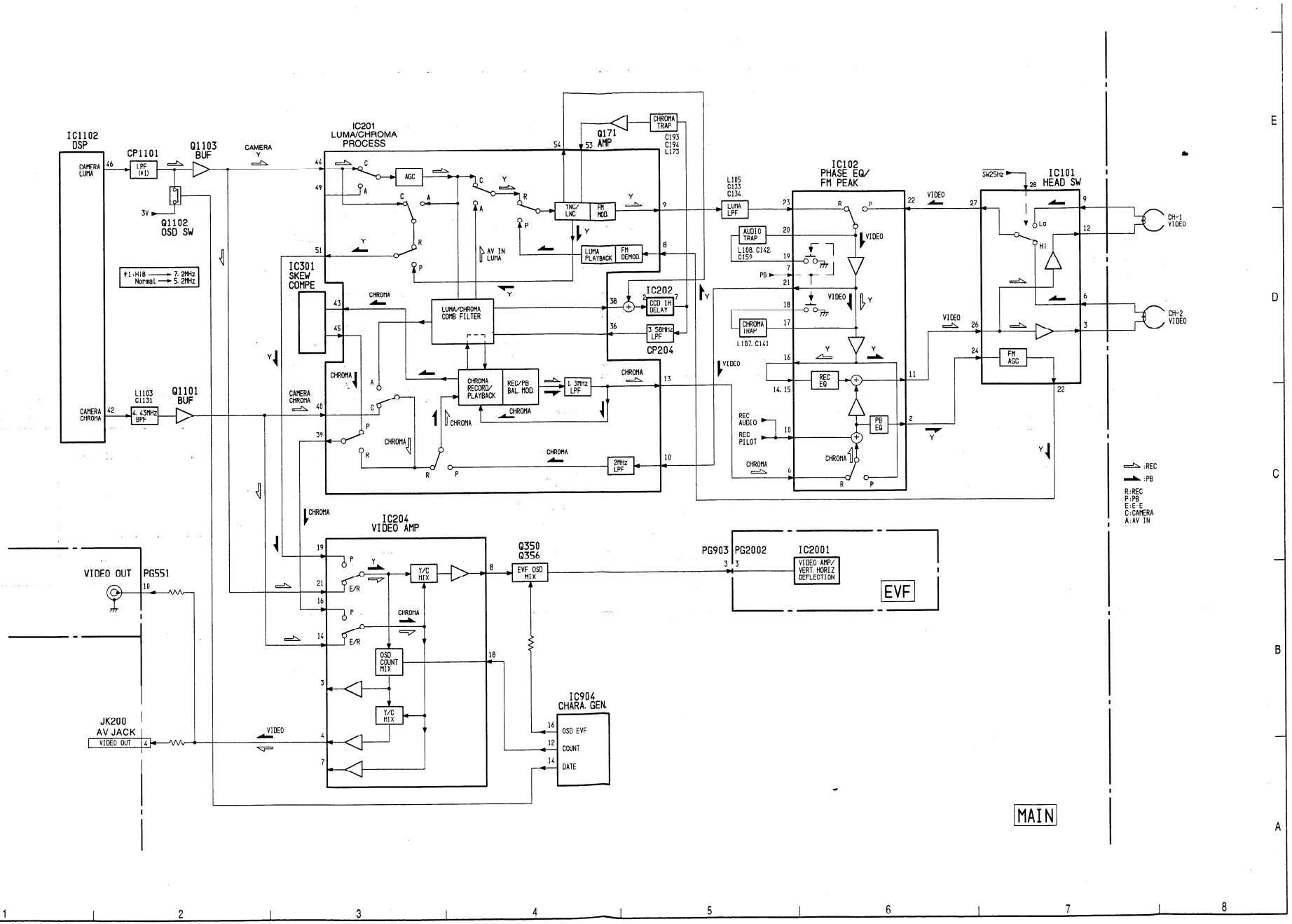


PIN No.	ABBREVIATION	MODE			
		STOP	LOAD	UNLOAD	BRAKE
69	LOAD	0	1	0	1
70	UNLOAD	0	0	1	1

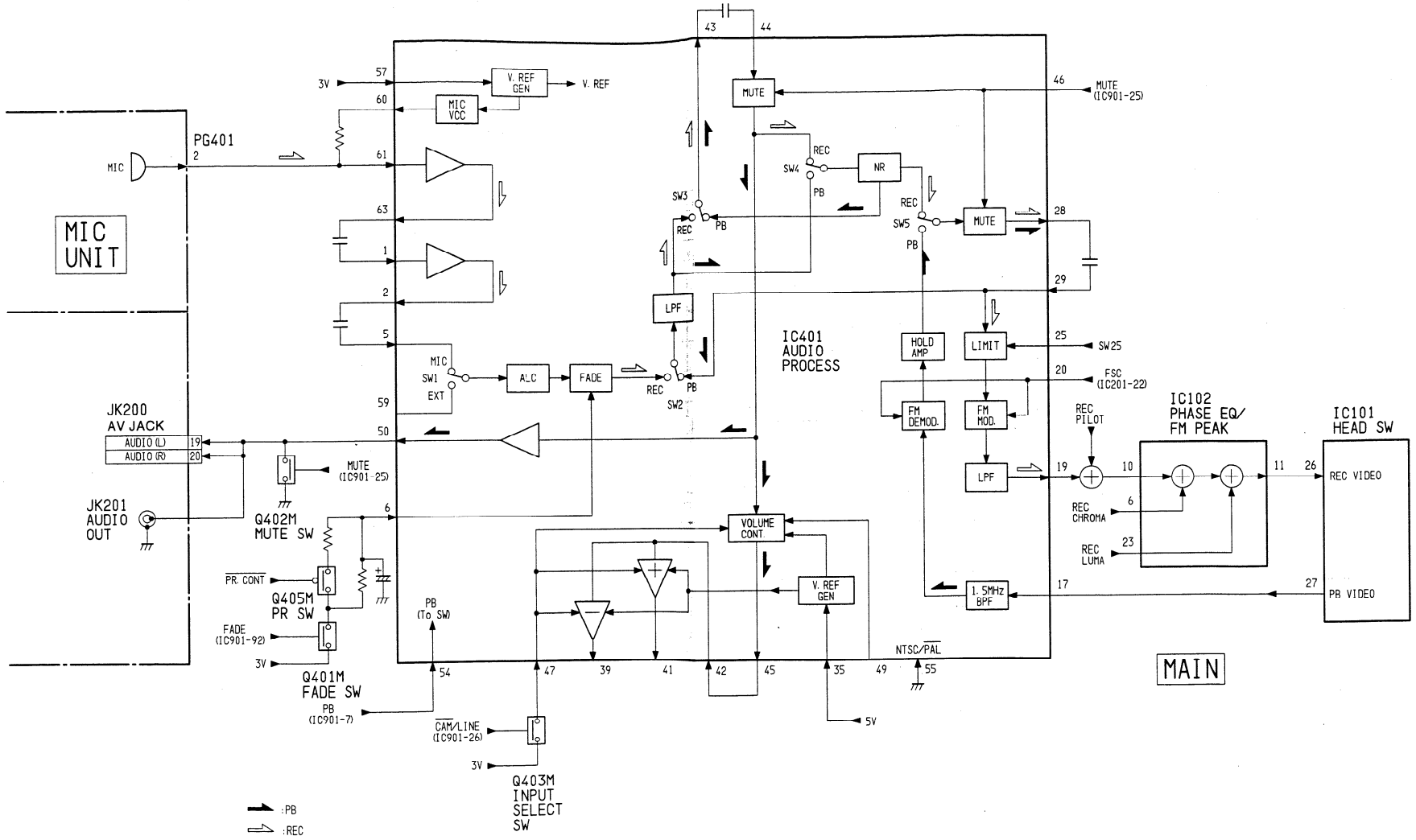
PIN No.	ABBREVIATION	MODE						
		EJECT	UL STOP	HALF LOAD	LOADING STOP	PLAY	UL PERFECT	TRANSIENT
12	MECHA. STATE 0	1	1	1	1	0	0	0
11	MECHA. STATE 1	1	0	0	1	0	1	0
10	MECHA. STATE 2	1	0	1	1	1	1	0


CYL. MOTOR
CYL. FG SENSOR
PG603
DRIVE COILS
IC631
MOTOR DRIVE
V. REF
AMP
MOTOR DRIVE
CYL. FG
CYL. PG
Q561
B+ (CYL.)
SW
IC551 (2/2)
PWM
B+ (CYL.) PWM
IC901
S-μP
CYL. SPEED
CYL. PHASE
CAPST. SPEED
REC
REC CAPST. PHASE
PB
PB CAPST. PHASE
ATF PILOT SEL. GEN
ATF VCO CONT.
MODE SW
CAPST. FG
PG602
IC551 (1/2)
PWM
B+ (CAPST.) PWM
Q562
B+ (CAPST.)
SW
CAPST. FG SENSOR
AMP
DRIVE COILS
MOTOR DRIVE
CAPST. MOTOR
IC101
HEAD SW
PG101
CH1 VIDEO
CH2 VIDEO
Lo
Hi
SW25Hz
IC102
PHASE EQ/
FM PEAK.
REC LUMA
REC CHROMA
FMA
Q604
AMP
Q602
AMP
IC601
ATF
LPF
REC
VCO
PB
FM DET
AGC
LPF
PEAK DET
Q603
AMP
MAIN

6. VIDEO


IC1102
DSP
CAMERA LUMA
CAMERA CHROMA
CP1101
LPF (*1)
Q1103
BUF
CAMERA Y
3V
Q1102
OSD SW
*1 : H:B → 7.2MHz
Normal → 5.2MHz
L1103
C1131
4.43MHz BPF
Q1101
BUF
IC201
LUMA/CHROMA PROCESS
AGC
Q171
AMP
CHROMA TRAP
C193
C194
L173
TNC/LNC
FM MOD.
LUMA PLAYBACK
FM DEMOD.
AV IN LUMA
IC301
SKEW COMPE
LUMA/CHROMA COMB FILTER
IC202
CCD 1H DELAY
3.58MHz LPF
CP204
CHROMA RECORD/PLAYBACK
REC/PB BAL. MOD.
1.3MHz LPF
2MHz LPF
CAMERA CHROMA
IC102
PHASE EQ/FM PEAK
L105
C133
C134
LUMA LPF
AUDIO TRAP
L108. C142. C159
CHROMA TRAP
L107. C141
REC EQ
PB EQ
REC AUDIO
REC PILOT
IC101
HEAD SW
SW25Hz
CH-1 VIDEO
CH-2 VIDEO
FM AGC
:REC
:PB
R:REC
P:PB
E:E-E
C:CAMERA
A:AV IN
IC204
VIDEO AMP
Y/C MIX
E/R
OSD COUNT MIX
Q350
Q356
EVF OSD MIX
PG903
PG2002
IC2001
VIDEO AMP/ VERT. HORIZ DEFLECTION
EVF
VIDEO OUT
PG551
JK200
AV JACK
IC904
CHARA. GEN.
OSD EVF
COUNT
DATE
MAIN

7. AUDIO


MIC UNIT
MIC
PG401
2
3V
57
V. REF GEN
V. REF
60
MIC VCC
61
63
1
2
5
MIC
SW1
EXT
ALC
FADE
REC
PB
SW2
LPF
IC401
AUDIO
PROCESS
43
44
MUTE
46
MUTE (IC901-25)
REC
SW4
PB
NR
SW3
REC
PB
REC
SW5
PB
MUTE
28
29
HOLD AMP
LIMIT
25
SW25
20
FSC (IC201-22)
FM DEMOD.
FM MOD.
LPF
REC PILOT
IC102
PHASE EQ/
FM PEAK
IC101
HEAD SW
19
10
11
26
REC VIDEO
REC CHROMA
6
REC LUMA
23
17
1.5MHz BPF
27
PB VIDEO
JK200
AV JACK
AUDIO (L)
AUDIO (R)
19
20
59
50
MUTE (IC901-25)
JK201
AUDIO
OUT
Q402M
MUTE SW
6
VOLUME CONT.
V. REF GEN
PR. CONT
Q405M
PR SW
PB
(To SW)
FADE
(IC901-92)
3V
Q401M
FADE SW
54
47
39
41
42
45
35
49
NTSC/PAL
55
5V
MAIN
PB
(IC901-7)
CAM/LINE
(IC901-26)
3V
Q403M
INPUT
SELECT
SW
:PB
:REC
E
D
C
B
A
1
2
3
4
5
6
7
8

MICROPROCESSOR PIN FUNCTION TABLES

1. Digital Microprocessor (IC1104: D-μP)

Pin No.	I/O	Active Level	Abbreviation	Function
1	-----	------	VCC	3V power input.
2	O	PWM	RD-PWM-A	Outputs focus motor drive signal to IC1301 (FOCUS MOTOR/ZOOM MOTOR DRIVE).
3	O	PWM	RD-PWM-B	
4	O	PWM	ZD-PWM-A	Outputs zoom motor drive signal to IC1301 (FOCUS MOTOR/ZOOM MOTOR DRIVE).
5	O	PWM	ZD-PWM-B	
6	O	(Pulse)	FCS-LED1	Output pulses to drive the LEDs in the focus reset switches (FOCUS RESET SW).
7	O	(Pulse)	FCS-LED2	
8	O	(Pulse)	ZOOM LED1	Output pulses to drive the LEDs in the zoom reset switches (ZOOM RESET SW).
9	O	(Pulse)	ZOOM LED2	
10	-----	-----	RESO[Lo]	Not used. Open.
11	-----	-----	VSS	Ground.
12	O	(Pulse)	SD (232C)	Used for initial settings and adjustment. For data communications with personal computer.
14	I	(Pulse)	RD (232C)	
13	O	(Pulse)	SD	For data communications with IC1102 (DSP), IC1105 (EEP-ROM) and IC901 (S-μP).
15	I	(Pulse)	S1	
17	O	(Pulse)	CLK	
16	-----	-----	----------	Not used. Open.
18	O	(Pulse)	LD-DSP	Activates data communications with IC1102 (DSP).
19	-----	-----	CS-MB	Not used. Open.
20	O	(Pulse)	CS-MA	Activates data communications with IC901 (S-μP).
21	-----	-----	LD-EV	Not used. Open.
22	-----	-----	VSS	Ground.
23	O	Lo	CS-EE	Activates data communications with IC1105 (EEP-ROM).
24	-----	-----	----------	Not used. Open.
25	-----	-----	----------	
26	O	(Pulse)	CS-CDS	Transfer data to IC1101 (CDS/AGC).
27	O	(Pulse)	CLK-CDS	
28	O	(Pulse)	SD-CDS	
29	-----	-----	ZD-RESET	Not used. Open.
30	O	Hi	ZDOEB	Activates data communications with IC1301 (FOCUS MOTOR/ZOOM MOTOR DRIVE).
31	-----	-----	ZDCW	Not used. Open.
32	-----	-----	RD-RESET	
33	O	(Pulse)	RDOEB	Activates data communications with IC1301 (FOCUS MOTOR/ZOOM MOTOR DRIVE).
34	-----	-----	RDCW	Not used. Open.
35	-----	-----	VCC	3V power input.
36	-----	-----	LD-VDRV	Not used. Open.
37	O	Hi	TALLY	Drives Q1108 (TALLY SW) to turn on the record LED during recording.
38	O	Hi	VGRO-RES	Drives IC1404 (GYRO RESET) via Q1401 (INV.) to reset IC1401 (V. GYRO) and IC1402 (H. GYRO).
39	-----	-----	HGRO-RES	Not used. Open.
40	-----	-----	HALL G0	
41	O	Hi	HALL G1	Control the amplification (gain of Hall device) of IC1201 (F.DET/IRIS DRIVE).
42	-----	-----	JIG-LOAD	Not used. Open.
43	-----	-----	CHECKB	
44	-----	-----	VSS	Ground.
45	----	-----	----------	Not used. Open.
46	----	-----	----------	
47	----	-----	----------	
48	----	-----	----------	
49	----	-----	----------	
50	----	-----	----------	

Pin No.	I/O	Active Level	Abbreviation	Function
51	-----	-----	----------	Not used. Open.
52	-----	-----	----------	
53	-----	-----	BRST-FLG	
54	-----	-----	T/W-FAST	
55	I	Lo	WIDE-SW	Zoom switch detection inputs.
56	I	Lo	TELE-SW	
57	-----	-----	VSS	Ground.
58	-----	-----	CLK-EV	Not used. Open.
59	-----	-----	SD-EV	
60	-----	-----	PWR-SAVE	
61	-----	-----	----------	
62	I	Lo	STBY[Lo]	No used. Connected to 3V power supply.
63	I	Lo	RESET[Lo]	Reset signal input from IC901 (S-μP).
64	I	Lo	NM1[Lo]	Not used. Connected to 3V power supply.
65	-----	-----	VSS	Ground.
66	I	(Pulse)	XIN	Clock pulse input from IC1102 (DSP).
67	-----	-----	XOUT	Not used. Open.
68	-----	-----	VCC	3V power input.
69	-----	-----	----------	Not used. Open.
70	I	Hi/Lo	PAL[Lo]	NTSC model: Not used. Connected to 3V power supply. PAL model: Used. Connected to ground.
71	I	Hi/Lo	SECAM[Lo]	Not used. Connected to 3V power supply.
72	I	Hi/Lo	Hi-BAND[Lo]	Normal 8 model: Not used. Connected to 3V power supply. Hi-8 model: Used. Connected to ground.
73	I	Lo	MD0	Not used. Ground.
74	I	Hi	MD1	Not used. Connected to 3V power supply.
75	I	Hi	MD2	
76	-----	-----	AVCC	5V power input (for analog circuits in microprocessor).
77	-----	-----	VREF	A/D reference voltage input (connected to 5V power supply).
78	-----	0V-5V	FDET	F-value detection input. Receives the F.DET voltage detected by IC1201 (F.DET/IRIS DRIVE) and compares this with the reference voltage input via pin 77 to detect the F-value.
79	I	0V-5V	V-MOVE	Receives vertical camera shake correction data from IC1401 (GYRO (VERT.)) via IC1403 (GYRO AMP).
80	I	0V-5V	H-MOVE	Receives horizontal camera shake correction data from IC1402 (GYRO (HORIZ.)) via IC1403 (GYRO AMP).
81	I	0V-5V	TEMP-ADJ	Temperature change detection input. Detects variations in the forward voltage at the connected diode to correct the back-focus.
82	I	0V-5V	CAM-KEY2	Camera switch detection input (Manual focus).
83	I	0V-5V	CAM-KEY1	Camera switch detection input (EIS, fade, cinema mode, instant zoom).
84	O	0V-5V	HAL-ADJ0	Drives bias generator in IC1201 (F.DET/IRIS DRIVE) via Q1201 (BUF) to control the bias voltage of the Hall devices.
85	O	0V-5V	HAL-ADJ.1	Controls the offset voltage of IC1201 (F.DET/IRIS DRIVE).
86	-----	-----	AVSS	Ground.
87	I	(Pulse)	FV	Receives the vertical sync pulses that detect the iris detection area, from IC1103 (DSP).
88	-----	-----	NEAR-SW	Not used. Open.
89	-----	-----	FAR-SW	Not used. Open.
90	I	(Pulse)	FP	Field discrimination pulse input.
91	I	(Pulse)	EP2	Receives pulses which discriminate the iris detection area.
92	----	-----	VSS	Ground.
93	I	(Pulse)	CHD(CNE)	Horizontal sync input.
94	-----	-----	----------	Not used. Open.
95	-----	-----	SUB-PWM	
96	-----	-----	----------	

Pin No.	I/O	Active Level	Abbreviation	Function
97	O	(Pulse)	CRTN-CNE	Supplies pulses to IC1102 (DSP) to control the wipe fade operation.
98	I	(Pulse)	FOCS-SEN	Focus motor position detection input.
99	-----	(Pulse)	IRIS PWM	Iris motor drive output.
100	I	(Pulse)	ZOOM-SEN	Zoom motor position detection input.

2. System Control Microprocessor (IC901: S-μP)

Pin No.	I/O	Active Level	Abbreviation	Function
1	O	Lo	CH2. REC[Lo]	Output the signals to select the video heads for recording. Go "Lo" in the corresponding channel period during recording.
2	O	Lo	CH1. REC[Lo]	
3	O	Hi/Lo	EVF. ON	EVF power control output. Outputs "Hi" when power is turned on.
4	O	(Pulse)	SW25Hz	Head switching pulse output.
5	O	Hi/Lo	LCD. ON	LCD power control output. Outputs "Hi" when power is turned on.
6	O	Hi/Lo	VCR ON	Power control output. Outputs "Hi" when power is turned on.
7	O	Hi/Lo	PB	Output to control the mode of the video processor. Goes "Hi" during playback.
8	O	Hi	D-STANDBY	Cylinder motor start auxiliary output. Outputs "Hi" for 50 ms when the motor is started in the forward rotation direction.
9	O	(Pulse)	END LED	End LED drive output. Outputs pulses of approx. 50Hz when power is turned on.
10	I	0V-3V	M-SW2	Mechanism state switch position (mode) detection input.
11	I	0V-3V	M-SW1	
12	I	0V-3V	M-SW0	
13	I	Lo	CAM SW[Lo]	Power switch detection input. "Lo" is input during recording (camera mode).
14	I	Lo	VCR SW[Lo]	Power switch detection input. "Lo" is input during playback (VCR mode).
15	I	Lo	EJECT SW[Lo]	Eject switch detection input. When "Lo" is input, the camcorder performs the eject operation even when the power is turned off (standby release input).
16	I	Lo	STAGE[Lo]	Cassette holder open/close detection input. "Lo" is input when the cassette holder is closed.
17	I	Hi/Lo	ME/MP[Lo]	Input to discriminate the type of tape. Hi: ME (metal evaporated) tape, Lo: MP (metal particle) tape.
18	I	Lo	WAKE UP[Lo]	Standby release input. When the camera power is turned on, "Lo" is input to release the standby mode. IC901 detects the inputs of each switch to start operation.
19	I	Lo	REC START[Lo]	Recording start/stop switch detection input.
20	I	Hi/Lo	ADP/BATT[Lo]	Power supply detection input. Hi: AC adapter, Lo: Battery.
21	I	Hi	HIBAND	Playback mode detection input. IC901 receives the playback mode detection signal sensed by IC201 (VIDEO PROCESS) and instructs IC904 (CHARA. GEN.) to generate the display signals and also transfers the operation mode data to IC201. Open for models with which only normal tapes are used.
22	I	Hi	TEST PROG.	Test program start detection input. A test program is executed when "Hi" is input.
23	I	Hi/Lo	LCD OPEN[Lo]/CLOSE	Input to siscriminate the state of LCD panel is opened or closed. Hi: Close, Lo: Open.
24	I	Lo	AV CONT	Input to detect whether an external AV signal is input or not. "Lo" is input when an AV input cable is connected to the AV input/output connector (JK200: AV IN/OUT).
25	O	Hi	MUTE	Audio muting output. Outputs "Hi" to mute sound.
26	O	Hi/Lo	CAM[Lo]/LINE	Video processor mode control output. Outputs "Lo" during camera recording and "Hi" with an external (line) signal.
27	O	Hi/Lo	S.EDIT	Table-top VCR mode control output. The operation mode of the VCR connected to JK200 (AV IN/OUT) is controlled remotely using the pause switch.
28	O	Hi	TRICK	Controls the video processor operation mode. Outputs "Hi" during trick play.

Pin No.	I/O	Active Level	Abbreviation	Function
29	O	Lo	OSD RESET [Lo]	Outputs "Lo" with power on and is set to open with power off to initialize IC904 (CHARA. GEN.).
30	O	Lo	TRICK	Controls the LCD control circuit operation mode. Outputs "Hi" during trick play.
31	O	Hi	C.STANDBY	Capstan motor power control output.
32	O	Lo	SW+B(VCR ON) [Lo]	Power control output. Outputs "Lo" when power is turned off.
33	O	Hi/Lo	LCD NOR/ HI[Lo]	Output to select the LCD display mode.
34	O	Lo	CAM RESET [Lo]	Camera block power supply control output. Outputs "Hi" when power is turned on and "Lo" when power is turned off to initialize the camera block (IC1104: D-μP).
35	O	Hi/Lo	f4SEL	Auto track finding (ATF) pilot signal select output.
36	O	Hi/Lo	TRK. MOD	Output to select the pilot signal from IC601 (ATF). Hi: VCO output, Lo: Playback (PB) FM signal
37	-----	-----	GND	Grounded.
38	I	Lo	SYSTEM RESET[Lo]	Microprocessor reset input. "Lo" input resets the microprocessor.
39	-----	-----	GND	Grounded.
40	O	(Pulse)	XTAL OUT 12MHz	Drive X901 to generate 12MHz main clock pulses.
41	I	(Pulse)	EXTAL IN 12MHz	
42	I	(Pulse)	D-STB(DSP)	For data communications with IC1104 (D-μP).
43	I	(Pulse)	D-DATA(DSP)	
44	O	(Pulse)	S-DATA(DS)	
45	I	(Pulse)	D-CLOCK(DSP)	
46	I	0V-3V	MODEL	Internal mode select input. (Select the NTSC(USA)/NTSC(JAPAN)/PAL etc.)
47	I	0V-3V	VCR KEY2	VCR operation switch detection input (playback, date/title).
48	-----	-----	----------	Not used.
49	I	0V-3V	BATTERY	Input to detect the battery remaining level
50	-----	-----	GND	Grounded.
51	I	-----	AVref	Reference voltage input.
52	-----	-----	AVdd	3V power input.
53	I	0V-3V	HI8MP	Hi-8 MP tape detection input.
54	I	0V-3V	REC INH	Erase prevention tab detection input.
55	I	(Pulse)	PB PILOT	Playback pilot signal (PB PILOT) input.
56	I	0V-3V	VCR KEY1	VCR operation switch detection input (rewind, fast forward, stop).
57	I	0V-3V	TRACK ADJ.	For the connection of a tracking control for adjustment. When an ATF-R jig is connected to PG601 (test plug), the variable resistor on the ATF-R jig can be used as a tracking control.
58	I	(Pulse)	EST	Take-up tape end detection inputs.
59	I	(Pulse)	ESS	Supply tape end detection inputs.
60	I	(Pulse)	PB.ENV	Playback (PB) FM signal input.
61	I	(Pulse)	RSS	Supply/take-up reel sensor inputs. Used to calculate the remaining tape and to detect reel lock.
62	I	(Pulse)	RST	
63	I	Hi/Lo	LCD REVERSE [Lo]	LCD position detection input. Hi: Normal position, Lo: Reverse position.
64	I	(Pulse)	C.SYNC	Composite sync signal input. The separated vertical sync signal is divided by two to generate the 1/2V.SYNC pulse which is used tocontrol the cylinder speed during recording (reference signal).
65	I	(Pulse)	VCO IN	Receive the signal from the VCO in IC601 (ATF) to fix the frequency of the recording pilot signal (VCO's output).
82	O	(Pulse)	VCO CONT	
66	I	(Pulse)	DPG	Tach pulse input. Feedback signal that controls the recording phase of the cylinder.

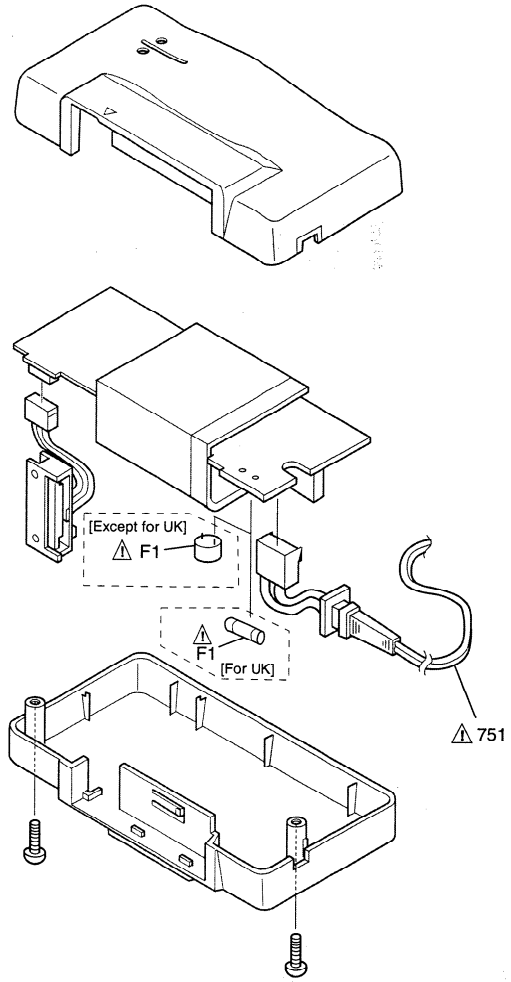
Pin No.	I/O	Active Level	Abbreviation	Function
67	I	(Pulse)	DFG	Cylinder FG (CYL. FG) pulse input. Controls the cylinder speed during recording and playback.
68	I	(Pulse)	CFG	Capstan FG (CAPST.FG) pulse input. Used for recording restart control (assemble recording).
69	O	Hi	LOAD	Loading motor drive outputs.
70	O	Hi	UNLOAD	
71	O	(Pulse)	EVF-CS	Not used. Open.
72	O	(Pulse)	OSD-CS	Activates communications with IC904 (CHARA. GEN.).
73	O	PWM	D.SPEED	Cylinder servo control outputs.
74	O	PWM	C.SPEED	Capstan servo control outputs.
75	I	(Pulse)	CFG	Capstan FG (CAPST.FG) pulse input. Used for counting of the linear time counter and (assemble recording).
76	I	Lo	V-DET[Lo]	Inputs whether a battery is attached or not. "Lo" is input when the battery is detached, to shift the microprocessor to the backup mode in which the data is saved.
77	-----	-----	----------	Not used.
78	O	(Pulse)	SSB DATA	For data communications with IC904 (CHARA. GEN.), IC201 (LUMA/CHROMA PROCESS) and IC401 (AUDIO PROCESS).
79	O	(Pulse)	SSB CLK	
80	I	Hi/Lo	HI8/NORMAL [Lo]	Internal mode select input (Hi: Hi-8 models, Lo: models used exclusively with normal tapes).
81	I	Hi/Lo	BATT S/P[Lo]	Maker of the battery detection input.
83	I	(Pulse)	REMOCON	Remote operation signal input from the infrared receiver.
84	I	(Pulse)	32MHz TEX IN	Generate 32kHz sub-clock pulses.
85	O	(Pulse)	32MHz TX OUT	
86	-----	-----	GND	Grounded.
87	-----	-----	VDD	3V power input.
88	-----	-----	----------	Not used. Connected to 5V power supply.
89	O	Hi	D.REVERSE	Cylinder motor reversing control output.
90	O	Hi	C.REVERSE	Capstan motor reversing control output
91	O	Hi	REC	Output to control the video processor during recording.
92	O	Hi	T.FADE	Rapid audio fading output. Outputs "Hi" when fading is started to fade the audio signal in rapidly, synchronized with the video signal.
93	O	Hi	FE CONT	Flying erase head oscillation control output
94	O	Lo	PR CONT	Preamp activation signal. Outputs"Hi" during playback to activate the preamp.
95	O	(Pulse)	HD	Artificial H. sync signal output.
96	O	(Pulse)	ADDV+SQ	Artificial V. sync signal + video muting signal output
97	O	(Pulse)	SW25Hz[Lo]	Inverted head switching pulse output
98	O	Hi/Lo	LCD-HOLD	Controls the LCD control circuit operation mode.
99	O	(Pulse)	AUDIO25	Outputs switching pulses to IC401 (AUDIO PROCESS).
100	O	(Pulse)	D.BRAKE	Output the cylinder brake pulse.

MEMO

CHAPTER 8 VM-ACE4E (AC ADAPTER/CHARGER)

EXPLODED VIEW & REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION
⚠ 751	EV10452	CORD, POWER (For UK)
⚠ 751	EV10462	CODE, POWER (For AU)
⚠ 751	EV10442	CODE, POWER (Except for UK, AU)
⚠ F1	FN10261R	FUSE 1.6A (Except for UK)
⚠ F1	5722801	FUSE (For UK)



HITACHI

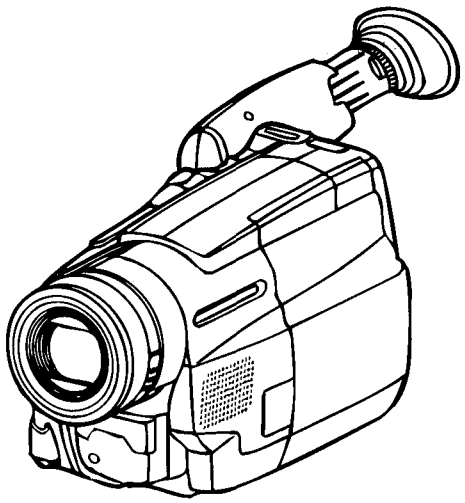
VM-E340E(R)/E358E TK No.6905E AV Consumer Products Division, Tokai
VM-H650E VM-ACE4E

Copyright © Hitachi, Ltd. 1999. All right reserved.

Printed in japan (III)

HITACHI

SERVICE MANUAL
Wartungsanleitung



TK | No.6714E,G

VM-E330E/H630E
VM-E535LE/E635LE
VM-H835LE

AC Adapter/Charger **VM-ACE3E**

TH MECHANISM

This model uses a TH mechanism.
When servicing the TH mechanism, use this manual with the TH Mechanism Service Manual (No. 6404E,G). This manual includes the new exploded view in Chapter 4 and the changed sections from the previous manual (No. 6404E,G) in Chapter 7.

Dieses Modell verwendet ein TH-Bandlaufwerk. Für Wartungsarbeiten an dem TH-Bandlaufwerk diese Anleitung gemeinsam mit der Wartungsanleitung für das TH-Bandlaufwerk (Nr. 6404E,G) verwenden. Diese Anleitung enthält die neue auseinandergezogene Darstellung in Kapiel 4 und die geänderten Abschnitte aus der vorhergehenden Anleitung (Nr. 6404E,G) in Kapitel 7.

Hi8

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT
Änderungen der Technischen Daten und Teile im Sinne standiger Verbesserung vorbehalten.

8mm VIDEO CAMERA/RECORDER
8-mm-Video-Kamerarecorder

June 1997 Image & Information Media Systems Division, Tokai

CAUTION

Lithium battery; danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacuturer's instructions.

When replacing the lithium battery it is important to use the same type and connect it correctly.

WARNING:
- Lithium batteries contain dangerous chemicals.
- Handle and dispose of with great care.
- Do not throw in a fire.
- Do not short circuit it.
- For disposal place in a plastic bag and put in waste bin.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts have special safety-related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for a higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual. Electrical components having such features are identified by marking with a ⚠ on the schematics and the parts list in this Service Manual. The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards. Product safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies for, HITACHI Service Manual may be obtained at a nominal charge from HITACHI SALES CORPORATION.

CAUTION (CRT EVF)

Be careful of the section painted in white on the electronic viewfinder circuit board as it generates a high voltage.

CAUTION (COLOR LCD)

LCD display; the liquid crystal display (LCD) panel is mode by highly precise technology.
More than 99.99% of its picture elements (pixels) are effective, but some (less than 0.01%) may appear as colored bright dots. This mode not indicate a fault as the LCD panel stretches the limits of current technology.

X-RAY RADIATION

The primary source of X-ray radiation in this viewfinder is the picture tube. The tube used in this viewfinder is specially constructed to limit X-ray radiation emission. For continued X-ray radiation protection, the replacement tube must be same type as the original, Hitachi approved one.

How to discriminate the "TYPE" identifications in the manual

The parts and circuits are identified by "TYPE" in this manual to discriminate the differences between models. The TYPE numbers are the same as the model numbers. The table below shows how to read the type identifications.

TYPE identification	Model name
TYPE 330	VM-E330E
TYPE 630	VM-H630E
TYPE 535	VM-E535LE
TYPE 635	VM-E635LE
TYPE 835	VM-H835LE

ENGLISH

C O N T E N T S

CHAPTER 1 GENERAL INFORMATION

SPECIFICATIONS E1-1
COMPARISON OF FEATURES E1-2
COMPARISON OF MAIN CONTROL ICs E1-4
JIGS AND TAPES FOR ADJUSTMENT E1-5
HOW TO USE THE EXTENSION CABLE E1-6
SERVICE MANUAL ABBREVIATION LIST E1-7
LEADLESS (CHIP)
COMPONENT IDENTIFICATION E1-9
MAINTENANCE/INSPECTION PROCEDURE E1-12
EXTRACT FROM THE
INSTRUCTION MANUAL (For VM-H835LE) · E1-14

CHAPTER 2 DISASSEMBLY

1. HOW TO SET THE
EJECT STATE MANUALLY E2-1
2. BEFORE STARTING DISASSEMBLY E2-2
3. CASES AND CIRCUIT BOARD,
MECHANISM BLOCK REMOVAL E2-3

CHAPTER 3 ELECTRIC CIRCUIT ADJUSTMENT

1. CONNECTION FOR ADJUSTMENT E3-1
2. CAMERA SECTION ADJUSTMENT E3-2
3. VCR SECTION ADJUSTMENT E3-18
4. ERROR MESSAGE E3-27
5. TROUBLESHOOTING OF AUTOFOCUS E3-29

CHAPTER 4 EXPLODED VEWS

1. CABINET SECTION [TYPE 330, 630] 4-1
2. CABINET SECTION [TYPE 535, 635, 835] 4-2
3. CHASSIS SECTION 4-3
4. CAMERA BLOCK SECTION 4-4
5. ELECTRONIC VIEWFINDER (EVF) SECTION ... 4-5
6. LCD DISPLAY SECTION 4-5
7. ACCESSORIES 4-6

CHAPTER 5 REPLACEMENT PARTS LIST

1. MECHANICAL PARTS LIST 5-1
2. ELECTRICAL PARTS LIST 5-2

CHAPTER 6 SCHEMATIC AND CIRCUIT BOARD DIAGRAMS

INTERNAL WIRING DIAGRAM 6-1

	SCHEMATIC/CIRCUIT	BOARD
SENSOR/GYRO [SE]	6-2	/ 6-44
CAMERA PROCESS [VCA]	6-4	/6-34, 38
TROUBLE SENSOR [HTS9551C]	6-7	/ 6-44
SYSTEM CONTROL [VCA]	6-8	/6-34, 38
SERVO [VCA]	6-10	/6-34, 38
AUDIO -MONAURAL- [VCA]		
(TYPE 330, 535, 635)	6-12	/ 6-34
AUDIO -STEREO- [VCA]		
(TYPE 630, 835)	6-14	/ 6-38
DC-DC CONVERTER [VCA]	6-16	/6-34, 38
Y/CHROMA [VCA]		
(TYPE 330, 535, 635)	6-18	/ 6-34
Y/CHROMA [VCA]		
(TYPE 630, 835)	6-21	/ 6-38
REAR UNIT	6-25	/ -----
LCD DRIVE [LCD]		
(TYPE535, 635, 835)	6-26	/ 6-42
ELECTRONIC VIEWFINDER [EMQ]	6-29	/ 6-44

IC BLOCK DIAGRAM 6-30

IDENTIFICATION OF PARTS LOCATION 6-46

WAVEFORMS
CAMERA 6-6
SYS. CON 6-7
SERVO 6-11
VIDEO 6-24
LCD 6-28
EMQ 6-29

BLOCK DIAGRAMS
1. OVERALL 6-54
2. CAMERA 6-56
3. SYSTEM CONTROL 6-58
4. SERVO 6-60
5. AUDIO 6-62
6. VIDEO 6-64
7. POWER 6-66

MICROPROCESSOR PIN FUNCTION TABLE
1. DIGITAL
MICROPROCESSOR (IC1104: D-µP) ... 6-68
2. SYSTEM CONTROL
MICROPROCESSOR (IC901: S-µP) 6-70

CHAPTER 7 APPENDIX

SELF-DIAGNOSIC FUNCTION E7-1
DEMONSTRATION (DEMO) MODE E7-6
TH MECHANISM E7-8
This describes only the differences from the "TH MECHANISM Service Manual (No.6406E)" issued previously.

CHAPTER 8 VM-ACE3E (AC ADPTER/CHARGER)

EXPLODED VIEW &
REPLACEMENT PARTS LIST 8-1

CHAPTER 1 GENERAL INFORMATION

SPECIFICATIONS

General Specifications

Power requirements	7.2V DC
Power consumption	
VM-H835LE:	4.5 watts (when recording/LCD monitor OFF)
	5.6 watts (when recording/LCD monitor ON)
VM-E635LE/E535LE:	4.3 watts (when recording/LCD monitor OFF)
	5.4 watts (when recording/LCD monitor ON)
VM-H630E	4.6 watts (when recording)
VM-E330E:	4.3 watts (when recording)
Dimensiond	
VM-H835LE/E635LE/E535LE:	104 (W) × 115 (H) × 239 (D) mm
VM-H630E/E330E:	91 (W) × 115 (H) × 239 (D) mm
Weight	
VM-H835LE/E635LE/E535LE:	approx. 920g (without battery pack or cassette)
VM-H630E/E330E:	approx. 760g (without battery pack or cassette)
Operating temperature	0°C to 40°C
Operating humidity	<80%
Storage temperature	-20°C to 60°C

Video Recorder Specifications

Format	8mm
Record/playback	Two video record/playback heads
Video signal	PAL colour & CCIR monochrome signal 625 lines
Tape speed	SP: 20.05mm/sec
Video output	1.0Vp-p, 75 ohm
Audio output	-8dBs, less than 1K ohm
Fast forward/rewind time	Less than 8 minutes with P5-90 cassette

Camera Specifications

Scanning	625 lines/50 fields/25 frames
Required minimum illumination	
VM-H835LE/H630E:	2 lux
VM-E653LE:	1 lux
VM-E535LE/E330E:	0.8 lux
Pickup device	1/4" C.C.D
Lens diameter	46mm

COMPARISON OF FEATURES

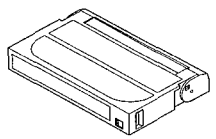
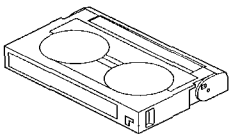
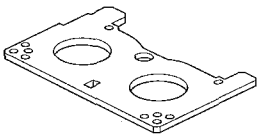
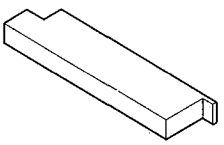
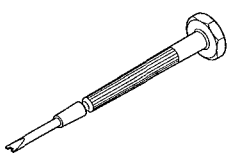
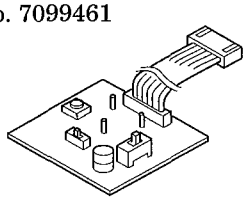
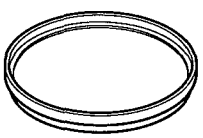
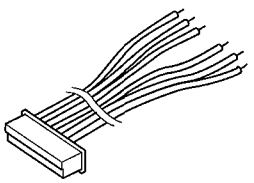
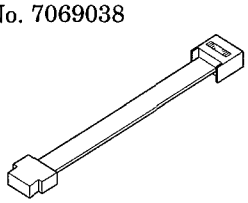
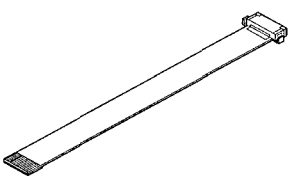
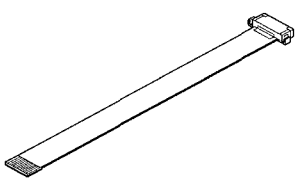
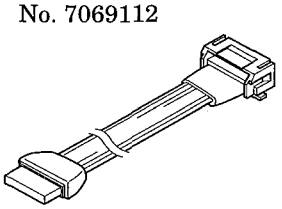
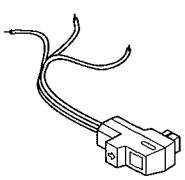
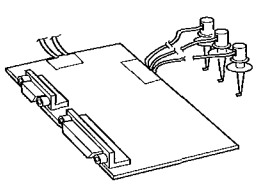
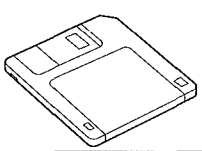
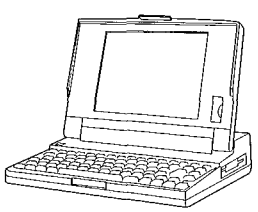
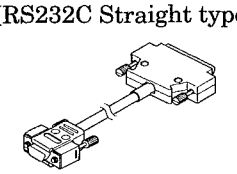
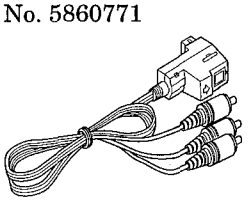
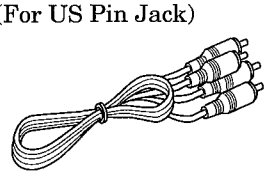
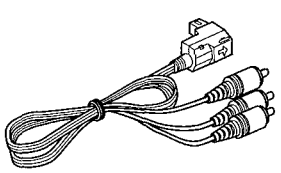
	ITEM	VM-H835LE/E635LE/E535LE	VM-H630E/E330E
GENERAL	POWER REQUIREMENTS	7.2V DC	Same as left
	POWER CONSUMPTION	VM-H835LE: 5.6 Watts VM-E635LE/E535LE: 5.4 Watts (when recording/LCD monitor ON)	VM-H630E: 4.6 Watts VM-E330E: 4.3 Watts (when recording)
	DIMENSIONS (W × H × D mm)	104 × 115 × 239	91× 115 × 239
	WEIGHT	Approx. 920g	Approx. 760g
	OPERATION TEMPERATURE/ HUMIDITY	0°C to 40°C <80%	Same as left
	STORAGE TEMPERATURE	-20°C to 60°C	Same as left
	FORMAT	VM-H835LE: 8mm [Hi-8] VM-E635LE/E535LE: 8mm	VM-H630E: 8mm [Hi-8] VM-E330E: 8mm
VIDEO	RECORD/PLAYBACK SYSTEM	2 HEADS + Flying Erase HEAD	Same as left
	TAPE SPEED	SP: 20.05mm/sec	Same as left
	F.F/REW TIME	Less than 8minutes with P5-90 cassette	Same as left
	HEAD WEEL	40mm	Same as left
	BASIC CHASSIS TYPE	TH MECHANISM	Same as left
CAMERA	REQUIRED MINIMUM ILLUMINATION	VM-H835LE: 2 lux VM-E635LE: 1 lux VM-E535LE: 0.8 lux	VM-H630E: 2 lux VM-E330E 0.8 lux
	CAMERA DEVICE	1/4" C.C.D	Same as left
	LENS DIAMETER	46 mm	Same as left
	ZOOM RATIO/APERTURE	1 : 16 (4mm - 64mm) / f1.4	Same as left
	ZOOM SPEED	1 SPEED	Same as left
OTHER FEATURES	ELECTRONIC VIEWFINDER	Black & White (CRT)	Same as left
	ELECTRONIC IMAGE STABILIZER	VM-H835LE/E635LE: YES VM-E535LE: NO	VM-H630E: YES VM-E330E: NO
	ELECTRICAL ZOOM	Max. × 130	Same as left
	INSTANT (INST.) ZOOM	YES (× 1.5)	Same as left
	AUTOFOCUS SYSTEM	VIDEO AF	Same as left
	PROGRAM AE (SHUTTER SPEED)	YES (Program AE only)	Same as left
	TITLER	YES (2 Lines)	Same as left
	S-CONNECTOR OUTPUT	VM-H835LE: YES VM-E635LE/E535LE: NO	VM-H630E: YES VM-E330E: NO
	CAMERA DC LIGHT SHOE	NO	Same as left
	MICROPHONE	VM-H835LE: STEREO VM-E635LE/E535LE: MONAURAL	VM-H825LE: STEREO VM-E325LE: MONAURAL
	FADE	YES (White/Wipe/Zoom/Black & White)	Same as left
	DATE SERCH	YES	Same as left
	16 × 9 MODE	YES	Same as left
	AUTOMATIC WIND CUT	VM-H835LE: YES VM-E635LE/E535LE: NO	VM-H630E: YES VM-E330E: NO
	AUTOFOCUS/MANUAL FOCUS	SELECTIVE	Same as left
	OPTICAL CONNECTION	NO	Same as left
ACCESSORIES	LCD MONITOR	YES (3-inch)	NO
	AC ADAPTER/CHARGER	VM-ACE3E	Same as left
	AV OPTICAL WIRELESS RECEIVER	NO	Same as left
	BATTERY PACK	VM-BPL13	Same as left
	REMOTE CONTROL	VM-RME311A	Same as left

VM-H825LE/E325LE	VM-H620E/E220E	ITEM	
6.0V DC	Same as left	POWER REQUIREMENTS	GENERAL
VM-H825LE: 7.9 Watts VM-E325LE: 7.3 Watts (when recording/LCD monitor ON)	VM-H620E: 5.4 Watts VM-E420E: 4.9 Watts (when recording)	POWER CONSUMPTION	
118 × 120 × 211	94 × 120 × 211	DIMENSIONS (W × H × D mm)	
Approx. 1050g	VM-H620E: Approx. 870g VM-E220E: Approx. 850g	WEIGHT	
0°C to 40°C <80%	Same as left	OPERATION TEMPERATURE/ HUMIDITY	
-20°C to 60°C	Same as left	STORAGE TEMPERATURE	
VM-H825LE: 8mm [Hi-8] VM-E325LE: 8mm	VM-H620E: 8mm [Hi-8] VM-E420E: 8mm	FORMAT	
2 HEADS + Flying Erase HEAD	Same as left	RECORD/PLAYBACK SYSTEM	VIDEO
SP: 20.05mm/sec	Same as left	TAPE SPEED	
Less than 8minutes with P5-90 cassette	Same as left	F.F/REW TIME	
40mm	Same as left	HEAD WEEL	
TH MECHANISM	Same as left	BASIC CHASSIS TYPE	
VM-H825LE: 4 lux VM-E325LE 1 lux	VM-H620E: 3 lux VM-E220E: 2 lux	REQUIRED MINIMUM ILLUMINATION	CAMERA
1/4" C.C.D	Same as left	CAMERA DEVICE	
46mm	Same as left	LENS DIAMETER	
1 : 12 (4mm - 48mm) / f1.6	Same as left	ZOOM RATIO/APERTURE	
1 Speed	Same as left	ZOOM SPEED	
Black & White (CRT)	Same as left	ELECTRONIC VIEWFINDER	OTHER FEATURES
VM-H825LE: YES VM-E325LE: NO	VM-H620E: YES VM-E220E: NO	ELECTRONIC IMAGE STABILIZER	
VM-H825LE: Max. × 150 VM-E325LE: Max. × 36	Max. × 36	ELECTRICAL ZOOM	
YES (× 1.5)	Same as left	INSTANT (INST.) ZOOM	
VIDEO AF	Same as left	AUTOFOCUS SYSTEM	
YES (Program AE only)	Same as left	PROGRAM AE (SHUTTER SPEED)	
YES (2 Lines)	Same as left	TITLER	
VM-H825LE: YES VM-E325LE: NO	VM-H620E: YES VM-E220E: NO	S-CONNECTOR OUTPUT	
YES	Same as left	CAMERA DC LIGHT SHOE	
VM-H825LE: STEREO VM-E325LE: MONAURAL	VM-H620E: STEREO VM-E220E: MONAURAL	MICROPHONE	
YES (White/Wipe/Zoom)	Same as left	FADE	
YES	YES	DATE SERCH	
YES	VM-H620E: YES VM-E220E NO	16 × 9 MODE	
VM-H825LE: YES VM-E325LE: NO	VM-H620E: YES VM-E220E: NO	AUTOMATIC WIND CUT	
SELECTIVE	Same as left	AUTOFOCUS/MANUAL FOCUS	
VM-H825LE: YES VM-E325LE: NO	VM-H620E: YES VM-E330E: NO	OPTICAL CONNECTION	
Yes (3-inch)	NO	LCD MONITOR	ACCESSORIES
VM-AC85E	Same as left	AC ADAPTER/CHARGER	
VM-H825LE: VM-IR20E VM-E325LE: NO	VM-H620E: VM-IR20E VM-E220E: NO	AV OPTICAL WIRELESS RECEIVER	
VM-BP82G	Same as left	BATTERY PACK	
VM-RME55A	Same as left	REMOTE CONTROL	

COMPARISON OF MAIN CONTROL ICs

ITEM	VM-H835LE/E635LE/E535LE VM-H630E/E330E		VM-H825LE/E325LE VM-H620E/E220E	
SENSOR/GYRO				
CCD SENSOR	Hi-8: ICX211	(IC1001)	Hi-8: ICX069AK/ICX071AK	(IC1001)
	Normal 8: ICX207/ICX210	(IC1001)	Normal 8: ICX087AK	(IC1001)
GYRO(VERT.)	CG-16DF0	(IC1401)		
GIRO(HORIZ.)	CG-16DF1	(IC1402)		
GYRO AMP	NJM062M-TE1	(IC1403)	NJU7032M	(IC1403)
GYRO RESET	TC4W66F	(IC1404)		
SENSOR DRIVE/PROCESS				
CDS/AGC	HD49322F	(IC1101)	HA118184F	(IC1101)
A/D CONV.			HD49319A	(IC1102)
DIGITAL PROCESS	HG51CS035TEA	(IC1102)	HG51CS035TEA	(IC1103)
DRIVE PULSE GEN.	µPD16510GR	(IC1103)		
DIGITAL µP (D-µP)	HD6433042ST-29F	(IC1104)	HD6433042T13F	(IC1106)
EEP-ROM	MX25S67MR	(IC1105)		
AUTO FOCUS				
F.DET/IRIS DRIVE	µPC5023GS-105	(IC1201)		
ZOOM MOTOR DRIVE	MPC17A34ZVM	(IC1301)	MPC17AT85VM	(IC1301)
FOCUS MOTOR DRIVE			MPC17AT85VM	(IC1302)
SYSTEM CONTROL/SERVO				
SYSTEM/SERVO CONTROL µP	CXP87240-117R	(IC0901)	CXP87240-107Q/-110Q	(IC0901)
BACK-UP DET	S84233FS	(IC0902)	S84206F	(IC0902)
LEVEL SHIFT	Not provided		HD74HCT125T	(IC0903)
CHARA.GEN.	BU6229FV	(IC0904)	XLU5949AFS	(IC0904)
LEVEL SHIFT	SN74AHCT126PW	(IC0905)	Not provided	
ATF	µPC5023GS-122-E1	(IC0601)	µPC5023GS-079-E1	(IC0601)
CYL. MOTOR DRIVE	LB1950V-TLM	(IC0631)	LB1888V	(IC0631)
LOADING MOTOR DRIVE	BA6417F	(IC0671)		
CAPST. MOTOR DRIVE	LB1951V-TLM (On the capst. motor)		LB1881V (On the capst. motor)	
AUDIO				
AUDIO PROCESS	Stereo: HA118193F	(IC0401)		
	Monaural: HA118193F-01	(IC0401)		
DC-DC CONVERTER				
PWM	BA9735KV	(IC0551)	TL14641PT	(IC0551)
PRE AMP				
VIDEO HEAD SW	HA118189MPER	(IC0101)	HA118189MPER	(IC0101)
PHASE EQ/FM PEAK	µPC5023GS-101-E1	(IC0102)		
LUMINANCE/CHROMA				
LUMA/CHROMQA PROCESS	HA119192AF	(IC0201)	HA118192AF/HA1181372F	(IC0201)
1H DELAY	CXL5517N	(IC0202)		
CCD 1H DELAY	CXL5508M	(IC0203)		
VIDEO AMP	µPC5023GS-104-E1	(IC0204)		
COLOUR ALIGNMENT	CXA2003N	(IC0301)		
ELECTRONIC VIEWFINDER (EVF)				
VIDE AMP./V.H DEFLECTION	HA118179F	(IC2001)		
LCD DISPLAY				
LCD VIDEO PROCESS	IR3Y29AM	(IC5301)	TS9622 (LCD Module)	(LD3501)
LCD REG.	TL5001CD	(IC5401)		
LCD REG.	TL5001CD	(IC5501)		
LED DRIVE	NJM2406F	(IC5502)		
LCD DRIVE	LZ95NA1	(IC5601)		
PULSE GEN.	NJM3414	(IC5602)		

JIGS AND TAPES FOR ADJUSTMENT

1. Alignment Tape Color Bar/400Hz (20HSC-3) No. 7099232 	**2.** Cassette Torque Meter SRK-8T-232 : No. 7099236 SRK-8T-212 : No. 7099402 	**3.** Master Plane No. 7099237 	**4.** Reel Disk Height Jig No. 7099238 
5. Special Driver No. 7099239 	**6.** ATF-R Jig *(*1, *2)* No. 7099461 	**7.** C12 Light Balance Filter 46mm Ø No. 7099369 	**#8.** 10-Pin Extension Cable No. 7069183 
9. 2-Pin Extension Cable No. 7069038 	**10.**10-Pin Extension Cable No. 7069039 	**11.** 9-Pin Extension Cable No. 7069040 	**12.** 20-Pin Extension Cable No. 7069112 
13. DSP AV Output Jig No. 7099456 	**14.** DSP-R Jig No. 7099448 	**#15.** Adjustment Floppy Disk (3.5inch) No. 7069188 	**§16.** Personal Computer 
§17. Personal Computer Cable 9-PIN or 25-PIN (RS232C Straight type) 	**18.** AV INPUT CABLE No. 5860771 	**+19.** AV Output Cable *(*3)* (For US Pin Jack) 	(For 20 Pin AV Jack) 

For marks :

#: New jigs and tools §: Goods on the Market $: Optional Accessory +: Accessory

Caution for jigs :

**1.* Always set SW3 on the ATF-R jig to ON.

**2.* The ATF jig (No.7099386) can also be used in place of ATF-R jig to adjust this model.

**3.* Either the monaural or stereo AV input/output cable can be used.

**4.* To supply video and audio signals, the AV input cable must be modified. (See next page for how to modify it).

HOW TO USE THE EXTENSION CABLE

NAME OF JIGS	PARTS No.	HOW TO USE
10-Pin Extension Cable	7069183	Cable to power the camera/recorder after the case is removed. [Pin 1 and 2: Positive, Pin 6 and 7: Negative] Power supply cable for power shut off level adjustment. NOTE: If it is used for the power shutoff level adjustment, short pins 3 and 5 to pin 6 or pin 7 (GND).
2-Pin Extension Cable	7069038	Installed between the VCA circuit board and loading motor.
10-Pin Extension Cable	7069039	Installed between the VCA circuit board and cylinder. NOTE: Using this extension cable causes noise to occur in the playback picture. This cable is used to check voltage and waveforms. Check the picture quality in the regular connection state.
9-Pin Extension Cable	7069040	Installed between the VCA circuit board and capstan motor.
20-Pin Extension Cable	7069112	Installed between the SE and VCA circuit boards.

Procedure to modify the AV input cable

Although all models do not have AV input function, you can modify the AV input cable so that video and audio signals can be input. For adjustment and performance check, modify the AV input cable by following the procedure below, to input signals:

Caution 1: Do not modify the AV input cable for purposes other than adjustment or performance check.

Caution 2: Modify the AV input cable correctly. If an improperly modified cable is connected to a camera/recorder, it will result in malfunctions.

Modify the AV input cable.

Change the connection of pin 13 of the AV input cable from ground to pin 2 (DC5V). (After checking that pin 13 and ground are not connected, connect pin 13 to pin 2 (DC5V).)

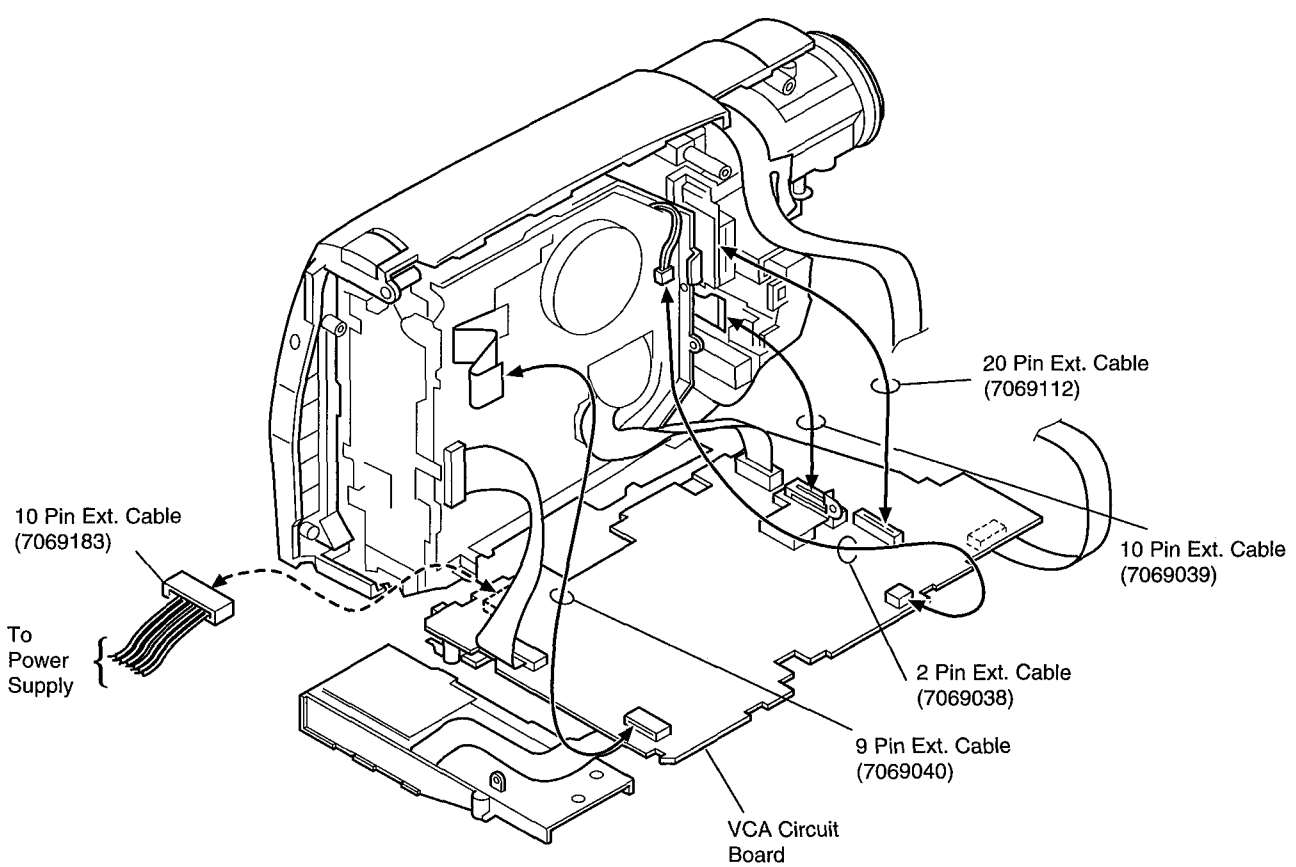


Fig.1-1 Extension Cable Connection Diagram

SERVICE MANUAL ABBREVIATION LIST

A	
ACC	Automatic Color Control
ADD	Adder
ADRS	Address
AF	Automatic focus (Autofocus)
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
AGC KILLER	AGC Killer Voltage
AI	Automatic Intelligence
AIC	Automatic Iris Control
ALC	Automatic Level Conrol
AMP	Amplifier
APC	Automatic Phase Control
ASBL	Assemle (Phase Matching)
AUD.	Audio
AUX	Auxiliary
A/D	Analog-to-Digital Converter
A.DUB	Audio Dubbing
B	
B (BLU)	Color Signal Blue
BATT.	Battery
BF	Burst Flag
BG	Burst Gate or Back Ground
BGP	Burst Gate Pulse
BLK	Blanking
BPF	Bandpass Filter
BUF.	Buffer Amplifier
B-YL	Color Difference Signal B-YL
C	
C (CHROMA)	Chrominance Signal
CAM	Camera
CAPST.	Capstan
CARRI.	Carrier
CATV	Cable TV
C.BLK	Composite Blanking
CCD	Charge Coupled Device
CDS	Correlated Double Sampling
CG	Character Generator
C.FG (CFG)	Capstan Frequency Generater
C.FREE RUN	Capstan Free Run
CH (Ch or ch)	Channel
CHARA.	Character
CHD	Camera Horizontal Drive Pulse
C.MEMORY	Counter Memory
CNR	Chroma Noise Reducer
COM.	Common
COMPA.	Comparator
COMPE.	Compensator
COMP-EXP	Compressor-Expander
COMPO	Composite
CONT.	Control
CONV.	Converter
COUNT.	Counter
CP	CP
C.PAUSE	Camp Pulse
C/R	Capacitor/Resistor
C.RESET	Countor Reset or Camera Reset

C	
C.REVERSE	Count Reverse
CS	Communication Signal
CST	Cassette
C.SYNC	Composite Synchronizing Signal
CTL	Control Track Pulse (Control)
CYL	Cylinder
D	
D (Digital)	Digital
DA	Double Azimuth
D/A	Digital to Analog Converter
D-D	Direct Drive
DEEMPHA.	Deephasis
DEF	Deflefction
DEMOD.	Demodulator
DET	Detector
DIFF. AMP	Differential Amplifier
DISP.	Display
DL	Delay Line
DO	Dropout
DOC	Dropout Compensator
DSP	Digital Signal Processor
D/W	Dark/White
D.ZOOM (DZ)	Digital Zoom
E	
EAROM (EA-ROM)	Electrically Alterable Read Only Memory
EEPROM (EEP-ROM)	Electrical Erasable Proframmed
E-E	Electronic-to-Electronic
EIS (E.I.S.)	Electronic Image Stabilizer
EMPHA. (EMPH)	Emphasis
EQ	Equalizer
ESS	Supply End Sensor
EST	Take-up End Sensor
EVF	Electronic Viewfinder
EXT.	External
E.ZOOM	Electronic Zoom
F	
F.ADV	Frame Advance
F/V	Frequency-to-Voltage Converter
FB	Feed back
FE	Full Erase
FF (F/F)	Flip Flop
F.FWD	Fast Forward
FG	Frequency Generator
FM	Frequency Modulation
FREQ.	Frequency
fsc	Sub Carrier Frequency
FWD	Forward
G	
GEN.	Generator
GND	Ground
H	
H (HORIZ.)	Horizontal
HB	Hi-Band

H	
HBF	Horizontal Burst Flag
HD	Horizontal Drive
Hi-Fi	High Fidelity
HPF	High-pass Filter
I	
IF	Intermediate Frequency
INDI.	Indicator
INST.	Instant
INT.	Internal
INV.	Inverter
I/O	In/Out (Input/Output)
IR	Infrared Rays
L	
LB	Low-Band
LCD	Liquid Crystal Dissplay
LIN.	Linear
LM	Loading Motor
LNC	Line Noise Canceller
LOG	Logarithm
LP	Long Play
LPF	Low-pass Filter
LUMA	Luminance
L/R	Left/Right
M	
MAN	Manual
M.BRAKE	Main Brake
M.CUT	Monitor Cut
MEM.	Memory
MIC	Microphone
MIX	Mixer
MMV	Monostable Multivibator
MOD.	Modulator
M.STATE	Mechanism State
M.STOP	Memory Stop
N	
NEG	Negative
NFB	Negative Feed Back
NOR. (NORM)	Normal
NR	Noise Reduction
O	
OB	Optial Black
OSC	Oscillator
OSD	On-Screen Display
P	
PB (PLAY)	Playback
PG	Pulse Generator
PLL	Phase Locked Loop
POS.	Positive
PROG.	Program
PROT.	Protector
PWM	Pulse Width Modulation
R	
R (RED)	Color Signal Red
RAM	Random Access Memory
REC	Record
RECT.	Rectifier

R	
REF.	Reference
REG.	Regulator
REV	Review
REW	Rewind
RF	Radio Frequency
ROM	Read Only Memory
RSS	Supply Reel Sensor
RST	Take-up Reel Sensor
R-YL	Color Difference Signal R-YL
S	
SAW	Sawtooth Signal
SC1 (0°)	3.58MHz Subcarrier Signal 1 (0-degree Phase Shifted)
SC2 (90°)	3.58MHz Subcarrier Signal 2 (90-degree Phase Shifted)
SEPA. (SEP)	Separator
S/H	Samle and Hold
SP	Standard Play or Speaker
S.REEL	Supply Reel Sensor
SRCH	Search
SRV	Servo
STABI.	Stabilizer
S.TRACK	Slow Tracking
STBY	Standby Mode
S-VHS	Super VHS
SW	Switch
SW30Hz (15 or 25Hz)	30Hz Head Switching Pulse (15 or 25Hz Head Switching Pulse)
SYNC	Synchronizing signal
SYS.CON	System Control
T	
T (TELE)	Telephoto Angle
T.BRAKE	Take-up Brake
TP	Test Point
T.REEL	Take-up Reel Sensor
TRS	Transfer
V	
V (VERT.)	Vertical
V.AGC	AGC Voltage
VCO	Voltage Controlled Oscillator
VD	Vertical Drive
V.DUB	Video Dubbing
VHS	Video Home System
VOL.	Volume
VP	Voltage Pulse
VCXO	Voltage Controlled Crystal Oscillator
W	
W (WIDE)	Wide Angle
WHT	Color Sifnal White
WHD	Wide Horizontal Drive
WHT BAL.	White Balance
Y	
Y	Luminance Signal
Y/C	Luminance/Chrominance
YEL (Ye)	Color Signal Yellow
YL	Luminance Signal (Low Component)

LEADLESS (CHIP) COMPONENT IDENTIFICATION

1. Leadless Transistor

The part name of a leadless transistor is indicated by a code on its surface, using one letter, one letter and one numeral,two letters, two letters and one numeral, two numerals, two numerals and one letter, three letters, or four letters.

Note: There are transistors with the same code but different part names, or with the same part name but different codes. Refer to the parts lists to finally identify a transistor.

CODE	PART NAME	CODE	PART NAME
Leadless (Chip) Transistor			
3925	2SC3925	BQ	2SB709A
1CQ	2SCB902	BR	2SC4081R
1D	2SC3127	BR	2SC2412K
1DS	2SD1328S	BR	2SC4617
1DT	2SD1328	BS	2SC2412K
1R	2SB970TX	C-7	2SA811
2BQ	2SK374PQ	C1G	KSC1623
2BR	2SK374QR	CB	2SC3646
2Y	2SC3757	CC	2SA1122C
2YQ	2SC4691	CC	2SC3647T
3N	2SK620	CC	2SC3647
4N	XN5601	CD	2SA1122D
4Q	XN1B301	CE	2SA1122E
4R	XN1C301	CK	2SD999
5C	XN4601	CP	2SC4097
5C	XP4601	CQ	2SC2411K
5H	XP4501	CR	2SB710
5H	XN4501	CR	2SC2411
5K	XP4401	CR	2SB1219
5K	XN4401	D16	2SC1622A
5L	XN5501	D17	2SC1622A
5N	XN6501	D18	2SC1622A
5O	XN6401	DB	2SD1766
5R	XP1501	DE	2SC2463
5R	XN1501	DF	2SD1623
5S	XN1504	DF	2SD1898
5V	XN1401	DG	2SD1624
5W	XN2501	DK	2SB798
5X	XN4504	EC	2SA1022
7R	XN2401	F-2	2SC1009F2
7S	XN1601	F-3	2SC1009F3
AA	2SD1757K	F-4	2SC1009F4
AKQ	2SA1738	FC	2SC2619
AKQ	2SA1806	FR	2SA1774
AL	2SA1791	FR	2SA1037K
AM	2SC4656	FR	2SA1576R
AO	2SB709AQR	FS	2SA1037K
AQ	2SB709AQ	GC	2SC2734
AQ	2SB766	GM	3SD1615
AR	2SB1462	HQ	2SA1036K
AR	2SB766	IC	2SC3016
AR	2SB709ARS	IRD	2SA1484
AR	2SB1218R	IS	2SB792S
AS	2SB766	IT	2SB792T
AS	2SB709AS	L-4	2SC1623L4
B3	2SC1621B3	L-5	2SC1623L5
B4	2SC1621B4	L-6	2SC1623L6
BC	2SB1188	L-6	2SC2812L6
BD	2SB1121	L-7	2SC2812L7
BE	2SB1260	L5	MMBC1623L5
BF	2SB1123	L6	MMBC1623L6
BF	2SB1308	LB	2SC2462B
BG	2SB1124	LC	2SC2462C
BH	2SB1001	LD	2SC2462D

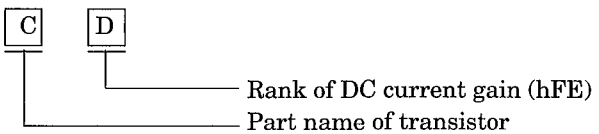
CODE	PART NAME	CODE	PART NAME
Leadless (Chip) Transistor			
LR	2SC2412KLN	T2	IMT2
M-5	2SA812	UD	2SC2404
M-6	2SA1179	ZS	2SD874S
MC	2SA1052MC	VR	2DS968A
MD	2SA1052MC-D	W1	FMW1
N3	2SC1653	W10	FMW10
ND	2SD1306ND	W2	FMW2
NE	2SD1306NE	W3	FMW3
PD	2SA1171D	WR	2SD602
PS	2SD814	X1	UMX1
QB	2SC2520QB	X1	IMX1
QC	2SC2620QC	X2	IMX2
QO	2SC2714	Y1	FMY1
R22	2SC4226	Y12	2SA1464
R22	2SC3356	Y25	NTM3906
R32	2SC4227	Y3	FMY3
R34	2SC3583	YCD	2SK197
R42	2SC3585	YI	2SA1666
RB	2SC2618RB	YQ	2SD601YQ
RC	2SC2618RC	YR	2SD601YR
RK	2SC3357	YR	2SD1819R
S1	FMS1	YR	2SD2216
S2	FMS2	YS	2SD601YS
SC	2SA1121	Z1	IMZ1
SO	2SA1162	Z2	IMZ2
SP	2SC3082K	ZO	2SD874T
T1	IMT1	ZQ	2SD601A
T1	UMT1	ZR	2SD874R
Digital Transistor			
3	DTC143TK	6C	UN9113
4	DTC114TK	6S	NP4113
6	DTC144TK	8B	UN5212
13	DTA143EK	8C	UN9213
14	DTA144EK	8C	UN2213
15	DTA124K	8S	XP4213
15	DTA124EU	9L	XP1213
16	DTA144EU	9L	XN1213
16	XDA144EK	A1	FMA1
16	DTA144EE	A1	UMA1
23	DTC143EK	A2	FMA2
24	DTC114EU	B2	UMB2
24	DTC144EK	B2	IMB2
25	DTC124EU	C2	FMC2
25	DTC124K	C5	FMC5
26	DTC144EE	D2	IMD2
26	DTC144EU	F52	DTB123
26	XDC144EK	G1	FMG1
33	DTA143XK	G2	FMG2
43	DTC143XK	G21	DTD113ZK
52	DTA123YK	G5	FMG5
60	UN511F	H03	DTC343TK
64	DTC114YK	H2	IMH2
80	UN521F	H2	UNH2
4P	XN1A312T	H27	DTC363EK
6B	UN5112	RO4	KSR1104
6C	UN2113	R31	FP1L2Q
FET			
30	2SK621	KB	2SK323
1FQ	2SK321FQ	WS	2SK322T
1FR	2SK321FQR	WT	2SK322T
1KP	2SK316	X15	2SK425
2BQ	2SK663	X4	2SK94
DY	2SK1579	XAF	2SK980FG
JO	2SK208	YC	2SK197YC
K	3SK166	YD	2SK197YD
K4	2SK160K4	YE	2SK197YE
K5	2SK160K5	ZD	2SK217ZD

(1) Identification with two letters

Use this code and the following chart for transistor identification.

Example :

Code	Part name
CD	2SA1122D
LD	2SC2462D

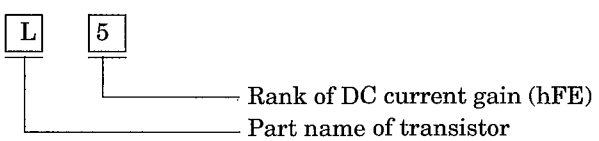


(2) Identification with one letter and one numeral

Use this code and the following chart for transistor identification.

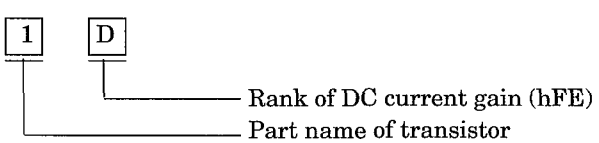
Example :

Code	Part name
L5	2SC1623(5)
L6	2SC1623(6)



Example :

Code	Part name
1D	2SC3127D



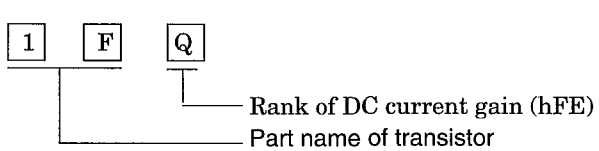
Note: Codes S1,S2,T1,W1,W2,W3,X1,Y1,Y3,Z1 and Z2 encode only the part names.

(3) Identification with one numeral and two letters

Use this code and the following chart for transistor identification.

Example :

Code	Part name
1FQ	2SK321Q

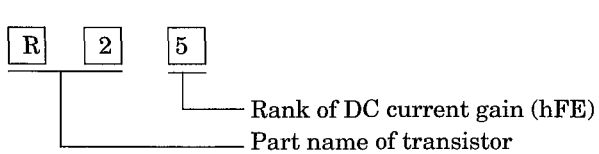


(4) Identification with one letter and two numerals

Use this code and the following chart for transistor identification.

Example :

Code	Part name
R25	2SC3356

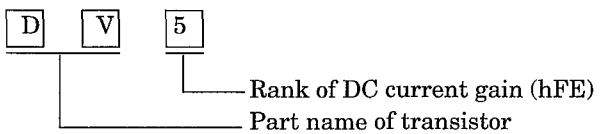


(5) Identification with two letters and one numeral

Use this code and the following chart for transistor identification.

Example :

Code	Part name
DV5	2SD596

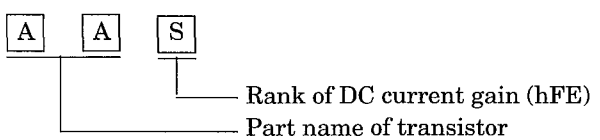


(6) Identification with three letters

Use this code and the following chart for transistor identification.

Example :

Code	Part name
AAS	2SD1757KS



2. Leadless Diode

The part name of a leadless diode is indicated by a code on the surface, using one letter and one numeral,two letters, two letters and one numeral, two numerals and one letter, or three numerals. Use this code and the following table to identify the part name of a diode.

Note: Refer to the parts lists to finally identify a diode.

CODE	PART NAME	CODE	PART NAME
Diode			
0	HVU300A	3D	RB715F
1.0	ISV201	3.0L	MA3030L
2.0	MA3020	3.6L	MA3036L
5.1	MA3051L	3.9L	MA3039L
5.1	MA3051M	4.3H	MA3043H
6.8	MA3068	4.3L	MA3043L
6.8	MA3068M	4.3M	MA3043M
7.5	MA3075L	4.7L	MA3047L
8.2	MA3082M	4.7M	MA3047M
9.1	MA3091	5.1H	MA3051H
20	HZM6	5.1L	MA3051L
24	ISV221	5.1M	MA3051M
27	RD2.7M B	5.6M	MA3056M
30	RD3.0M B	6.2L	MA3062L
51	RD5.1M B2	6.2M	MA3062M
56	RD5.6M B	6.8H	MA3068H
91	RD9.1M B	6.8L	MA3068L
102	RD10M B2	6.8M	MA3068M
122	RD12M B2	6.8M	MA3068
163	RD16M B3	7.5H	MA3075H
182	RD10M B2	7.5L	MA3075L
271	RD2.7M B	8A	UN221D
272	D2.7M B2	8.2H	MA3082H
301	RD3.0M B	8.2M	MA3082M
362	D3.6M B2	9.1M	MA3091M
391	D3.9M B1	9.1M	MA3091
512	RD5.1M B2	10L	MA3100L
561	RD5.6M B	10M	MA3100M
621	RD6.2M B1	11L	MA3110L
681	RD6.8M	12M	MA3120M
683	RD6.8M B3	13H	MA3130H
911	RD9.1M B	18M	MA3180M
2.7H	MA3027H	36M	MA3360

CODE	PART NAME	CODE	PART NAME
Zener Diode			
1A	MA110	M3A	MA199
A3	1S2835	MC	MA153
A4	HSM2836C	MC	MA143
A5	1S2837	MH	MA141K
A6	HSM2838C	MH	MA151K
B	SB0505CP	MH	MA152K
B64	SFPB64	MI	MA132K
B74	SFPB74	MN	MA141WA
BE	1SV172	MN	MA152WK
C1	HSM88S	MN	MA132WA
C2	HSM276S	MO	MA152WA
C3	1SS226	MO	MA133
C4	HSM88WK	MP	MA151WK
F7	KV1470	MT	MA141WK
H5	HVM14	MT	MA141WK
J	SB07-03C	MU	MA132WK
K	DA221	MU	MA151WA
M1A	MA159	N	DAN222
M1C	MA158	N	DAN202T
M1M	MA721	NU	MA152WK
M1N	MA713DAT	P	DAP202T
M1P	MA714	S4	DIFS4
M2A	MA122	SA	SB10-05P
M2B	MA123	Z	DA106K

3. Leadless Resistor

The resistor value is indicated on its surface, using three numerals, or one letter and one numeral.

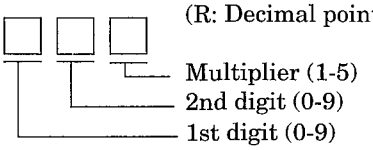
(1) Identification with three numerals

Read this code following the same procedure as when reading the color code on discrete resistors.

Example:

Code	Value
330	33 ohms
561	56 × 10 = 560 ohms
123	12 × (10 × 10 × 10) = 12K ohms
1R2	1 + 0.2 = 1.2 ohms

(R: Decimal point)



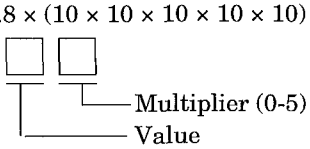
(2) Identification with one letter and one numeral

Use this code and the following chart for resistor identification.

Letter	Value	Letter	Value	Letter	Value
A	1	J	2.2	S	4.7
C	1.2	L	2.7	U	5.6
E	1.5	N	3.3	W	6.8
G	1.8	Q	3.9	Y	8.2

Example:

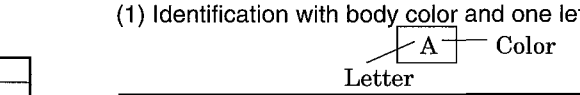
Code	Value
A1	1 × 10 = 10 ohms
G2	1.8 × (10 × 10) = 180 ohms
L3	2.7 × (10 × 10 × 10) = 2700 ohms
S4	4.7 × (10 × 10 × 10 × 10) = 47K ohms
W5	6.8 × (10 × 10 × 10 × 10 × 10) = 680K ohms



4. Leadless Capacitors

The capacitor value is indicated on its surface, using body color and one letter, or one letter and one numeral.

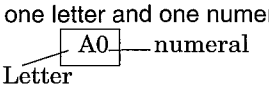
(1) Identification with body color and one letter



Body Color	Letter	Value	Body Color	Letter	Value
Red	A	1(PF)	Blue	G	180(PF)
	C	2		J	220
	E	3		L	270
	G	4		N	330
	J	5		Q	390
	L	6		S	470
	N	7		U	560
	Q	8		W	680
	S	9		Y	820
Black	A	10(PF)	White	A	0.001(μF)
	C	12		E	0.0015
	E	15		J	0.0022
	G	18		L	0.0027
	J	22		N	0.0033
	L	27		S	0.0047
	N	33		W	0.0068
	Q	39	Green	A	0.01(μF)
	S	47		E	0.015
	U	56		J	0.022
	W	68		N	0.033
	Y	82		S	0.047
Blue	A	100(PF)		U	0.056
	C	120		W	0.068
	E	150		Y	0.082
			Yellow	A	0.1(μF)

Example :	Color	Letter	Value
	Red	A	1PF
	Black	A	10PF

(2) Identification with one letter and one numeral



Letter/Numeral	Value	Letter/Numeral	Value
A0	1(PF)	A2	100(PF)
H0	2	C2	120
M0	3	E2	150
d0	4	G2	180
f0	5	J2	220
m0	6	L2	270
n0	7	N2	330
t0	8	Q2	390
y0	9	S2	470
A1	10(PF)	U2	560
C1	12	W2	680
E1	15	Y2	820
G1	18	A3	0.001(μF)
J1	22	E3	0.0015
L1	27	J3	0.0022
N1	33	N3	0.0033
Q1	39	S3	0.0047
S1	47	W3	0.0068
U1	56	A4	0.01(μP)
W1	68	E4	0.015
Y1	82	J4	0.022
		N4	0.033
		S4	0.047
		U4	0.056
		W4	0.068
		A5	0.1

Example :

Letter/Numeral	Value
A0	1PF
A1	10PF

5. Leadless Jumper

The leadless jumper indicated as shown below.

1. Required Maintenance

The recording density of a VCR is much higher than that of an audio tape recorder. VCR components must be very precise to ensure compatible with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure a good picture, periodic inspection and maintenance, including replacement of worn-out parts and lubrications, is necessary.

2. Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR, and the environment in which the VCR is used. But, in general home use, a good picture will be maintained if the inspection and maintenance is done every 500 hours. Table 1 shows the relation between time used per day and inspection period.

Table 1

	When inspection is necessary		
Average hours used per day	About 6 months ↓	About 9 months ↓	About 18 months ↓
One hour			
Two hours			
Three hours			

3. Check before starting Repairs

The faults occurring in the playback picture as shown in Table 2 can be remedied by cleaning and oiling. Check the need for lubrication and the conditions of cleanliness in the unit. Check with the customer to find out how often the unit is used. If from that you determine that the unit is ready for inspection and maintenance, check the parts shown in Table 2.

Table 2

Phenomenon	Inspection Location
Poor S/N, no color	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pressure roller, cylinder or in tape transport system
Vertical jitter	Dirt on video head or in tape transport system
Low volume or sound distorted	Dirt on video head or worn video head

4. Tools Needed for Inspection and Maintenance

(1) Head cleaning kit
(2) VCR oil and grease (Table 3)
(3) Alcohol
(4) Gauze
(5) Cleaning tape 〔Maxell 8M-CL MCA (dry type)〕

Table 3 Locations for Greasing and Oiling

Name	Oil or Greasing Location
Sonic Slidas Oil (#1600)	Oil low-speed rotating sections
Froil (G31-SA)	Lubricate metal or molded section under light load
Molicoat (PG-641)	Lubricate metal or molded sections under light load
Lock paint	Fix adjustment screws and nuts.

5. Maintenance Procedures

5-1 Cleaning

(1) Cleaning video head

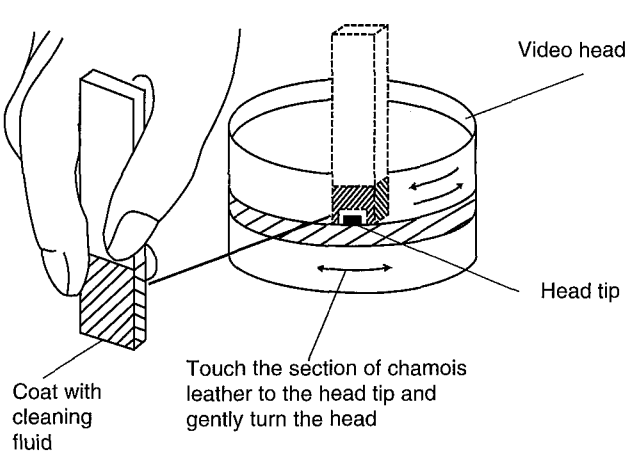
First use a cleaning tape. Be sure to use the specified cleaning tape and read its instruction sheet carefully before using it. If dirt on head is too stubborn to remove by tape, use the cleaning kit. Moisten the cleaning stick with cleaning fluid at the point indicated. Touch the stick to the head tip and gently turn the head (rotating cylinder) to the right and left. (Do not move the stick vertically and make sure that only the chamois leather on the stick comes into contact with the head. Otherwise, the head may be damaged.) Thoroughly dry the head. Then test run a tape. If cleaning fluid remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Cleaning the tape transport system and drive system, etc.

Wipe with gauze moistened with alcohol.

Notes: 1) The tape transport system is the system which comes into contact with the running tape. The drive system consists of those parts which run the tape.

2) Make sure that during cleaning you do not touch the tape transport system with the tip of a screwdriver and that no force is applied to the system that could deform it.



5-2 Lubrication

(1) Guide lines for lubricating with oil

Use the oiler to apply one or two drop or Sonic Slidas oil. Make sure not to use too mach oil because it may spill over or leak out coming into contact with rotating parts and causing slippage or other problems. If too much oil is applied, wipe clean with a alcohol.

(2) Periodic oil lubrication

Lubricate the specified locations only when replacing components. Refer to the exploded views for the lubricating locations.

5-3 Greasing

(1) Greasing guide lines

Apply grease Froil or Molicoat, with a stick or brush. Do not use excess grease. It may come into contact with the tape transport or drive system. Wipe any excess and clean with gauze moistend with alcohol.

(2) Periodic greasing

Grease the specified locations only when replacing components. Refer to the exploded views for the greasing locations.

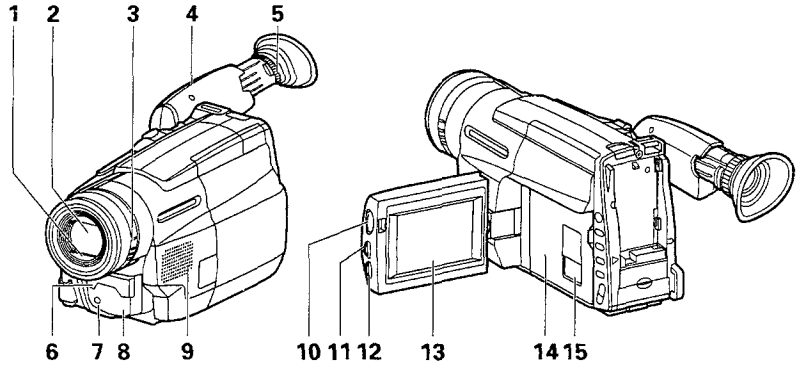
Table 4 Parts to be Maintained/Inspected and Maintenance/Inspection Schedules

Caution: The following table does not apply to all units. The maintenance/inspection schedules depend on how the unit is used and the environment in which it is used.

Component \ Hours	500	1000	1500	2000	2500	3000
Video heads (cylinder assembly)	C	C／R	C	C／R	C	C／R
Supply guide roller	C	C	C	C	C	C
Supply guide pole	C	C	C	C	C	C
Take-up guide roller	C	C	C	C	C	C
Pull-out pole	C	C	C	C	C	C
Tension pole	C	C	C	C	C	C
Tension band		R		R		R
Supply reel disk	C	C	C	C／R	C	C
Take-up reel disk	C	C	C	C／R	C	C
Pressure roller	C	C	C	C／R	C	C
Impedance roller	C	C	C	C	C	C
Capstan belt				R		
Reel drive idler				R		
Capstan shaft (capstan motor)	C	C	C	C／R	C	C
Loading motor				R		

C : Cleaning
R : Parts replacing

CONTROLS AND FUNCTIONS



1. Lens Door
Slide the lens door opener to open and close the lens door. To protect the lens, keep the lens door closed when not recording.

2. Lens
F1.4 (4 ~ 64 mm) 16X power zoom lens features with auto focus and auto iris functions.

3. Lens Door Opener
Slide the opener to open and close the lens door. Align with OPEN to open the lens door for recording. Align with CLOSE to close it.
Hold down the small button in the opener as you slide it to CLOSE. However, you need not hold it down to slide the opener to OPEN.

4. Electronic Viewfinder

5. Diopter Control
To use the electronic viewfinder, turn this control for your optimum focus adjustment.

6. Stereo Microphone
Sensitive to sounds coming from the direction in which the camera is pointed.

7. Record Indicator
This indicator lights up to indicate that the camera/recorder is recording.

8. Infrared Ray Receiving Section
Receives infrared rays from the remote control unit.

9. Speaker
You can listen to the recorded sound.

10. OPEN Button
Push this button to open the LCD monitor.

11. Bright Control
Use this to adjust the brightness of the LCD monitor screen.

12. Volume Control
Use this to adjust the volume when viewing a played back picture on the LCD monitor.

13. LCD Monitor
You can view the pictures as they are being recorded and play them back immediately after recording on the 3-inch LCD screen.

14. Cassette Holder
Slide the EJECT switch to open the cassette holder. Be aware of the cassette direction when inserting.
NOTE: Power source must be connected to open the cassette holder.

15. Cassette Holder Close Button
CAUTION: Be sure to press this button to close the cassette holder. Otherwise, the tape may become slack and may be damaged.

16. INST. ZOOM (Instant Zoom) Button
Use this button to magnify the image being recorded 1.5 times momentarily.

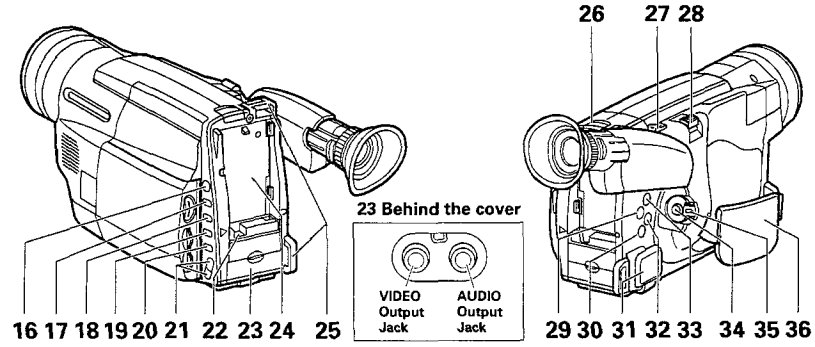
17. EIS (Electronic Image Stabilizer) Button
Press to display " " in the viewfinder or LCD monitor. EIS corrects slight shaking of the image to be recorded.

18. D.EFFECT Button
Use this button to add special effects to your recording. You can select five modes — 16X9 mode, negative/positive mode, X130 digital zoom mode, half-mirror mode and mosaic mode.

19. FADE Button
During recording you can add a professional touch to your recordings by fading in and out of the scenes. You can select the four fade modes — the white fade, wipe fade, zoom fade and black-and-white fade.

20. DATE/DISP Button
When the CAM/OFF/VIDEO switch is set to CAM, this button can be used as the DATE button; set the date and time, and select the date display you want to record. In the VIDEO mode, the DATE/DISP. button is used as the DISPLAY button.
NOTE: Be sure to insert the clock battery before setting the date and time or creating a title.

21. FOCUS Control Buttons
Press these buttons simultaneously to switch between automatic and manual focusing.
When "FOCUS" is not displayed in the viewfinder or LCD monitor, focusing is automatic.
If these buttons are pressed at the same time and "FOCUS" appears, the camera/recorder enters the manual focus mode. For manual focusing, press the ▲ or ▼ button to bring the subject into focus.



22. DC IN Jack
When using the AC adapter/charger, connect one end of the DC cord (provided) to this jack and the other end to the DC OUT jack of the AC adapter/charger. When using the car battery cord (optional), connect this jack and the DC OUTPUT jack of the car battery cord.

23. AUDIO/VIDEO Output Jacks (Behind the cover)
You can use a generally available audio/video cable instead of the AV stereo output cable (provided) when viewing the playback picture on the TV, etc.
- Connect the yellow plug of the audio/video cable to the yellow jack (VIDEO OUT) and the white plug to the white jack (AUDIO OUT).
- The playback sound becomes monaural.

24. Power Supply Attachment Section
Attach the battery pack (provided) here.

25. Shoulder Strap Slots
Attach the shoulder strap here.

26. BATTERY EJECT Lever
Releases the battery attached to camera/recorder.

27. EJECT Switch
Operates with the CAM/OFF/VIDEO switch either on or off, if a power source is connected to the camera/recorder.

28. Power Zoom Control
This control performs zooming electrically.
"W": Picture becomes wider gradually.
"T": Picture becomes telescopic gradually.

29. PLAY Button
Used for playback of tape.
NOTE: When the camera/recorder is in record/pause (stand-by) mode, pressing and holding this button will play the tape at normal.

30. STOP Button
The STOP button is used to stop playback, rewind, and fast forward operations. The STOP button has no effect during record operation. Also use STOP button when setting the date/time.

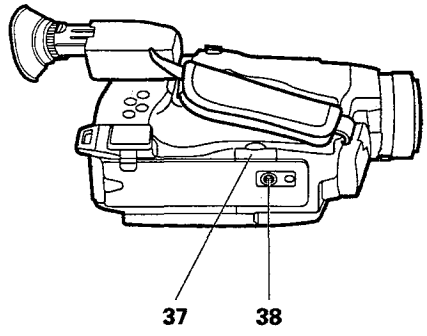
31. Audio/Video Output Jack (Behind the cover)
Use the AV stereo output cable (provided) or RF output adapter (optional) to connect this jack to a TV to view the pictures played back by the camera/recorder.

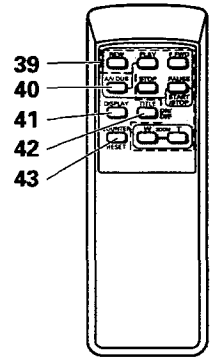
32. REW/REVIEW Button
Press this button during stop or fast forward mode, and fast-rewinding starts. Press the button during playback of tape, and the tape is played back in the rewind direction approximately 5 times faster than the normal speed to confirm the recorded contents. Press PLAY button to return to normal playback mode or press STOP button to stop tape movement ("F-SEARCH AND R-SEARCH", page 17). Also use this button to review the last few seconds of the tape you are recording. Use REW/REVIEW button when setting the date/time.
NOTE: You can also visually scan backward when the camera/recorder is in record/pause (stand-by) mode by pressing and holding this button.

33. F.FWD Button
Press this button during stop or rewind mode, and fast-forwarding starts. Press the button during playback of tape, and the tape is played back in the forward direction approximately 7 times faster than the normal speed to confirm the recorded content. Press PLAY button to return to normal playback mode or press STOP button to stop tape movement ("F-SEARCH AND R-SEARCH", page 17). Also use F.FWD button when setting the date/time.
NOTE: You can also visually scan forward when the camera/recorder is in record/pause (stand-by) mode by pressing and holding this button.

34. Start/Stop Button
This button is used to control the camera/recorder. When this button is pressed with the camera/recorder set to the record/pause mode, the tape runs to start recording.
When this button is pressed again, the tape stops and the camera/recorder enters the record/pause (stand-by) mode. This button may also be used to display a still picture during playback mode.

CONTROLS AND FUNCTIONS





35. CAM/OFF/VIDEO Switch
This switch turns the camera/recorder on and off. Set the switch to CAM for camera recording, and to VIDEO for playback. Hold down the small red button as you slide the switch to CAM or VIDEO. You do not need to hold down the red button to slide the switch to OFF.

36. Hand Strap
Adjust to best fit to your hand. (Refer to page 7.)

37. Clock Battery Compartment
Pull the battery holder and install the lithium battery (provided).

38. Tripod Mount Screw
Use this screw to mount the camera/recorder on a tripod (generally available).

39. Camera/Recorder Control Buttons
These shaded buttons on the remote control function the same as those on the camera/recorder.

40. A/V DUB Button (only on the remote control)
This button is used to record new audio and video in place of existing audio and video.

41. DISPLAY Button
Use this button to select the display in the viewfinder or LCD monitor.

42. TITLE ON/OFF Button (only on the remote control)
Use this button to store a title in memory or recall the stored title and record it superimposed on the picture being shot.

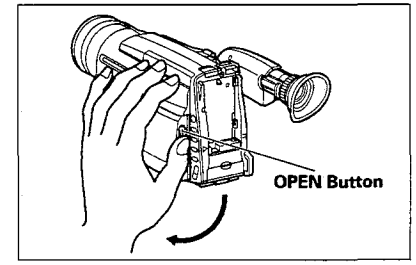
43. COUNTER RESET Button (only on the remote control)
Press this button to reset the linear time counter in the viewfinder or LCD monitor to "0:00:00"

LCD MONITOR

When using the LCD monitor during recording and playback, you can adjust the brightness of its screen and the angle of the monitor.

■ Opening the LCD monitor

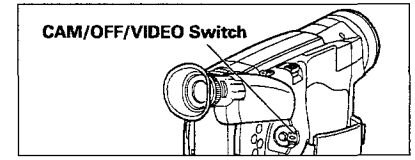
1. Press the OPEN button to open the LCD monitor.



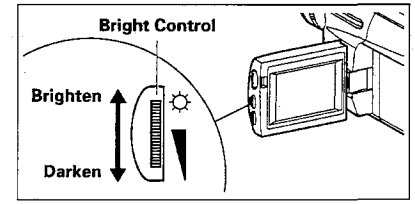
■ Adjusting the brightness of the LCD screen

NOTE: Even when the picture on the LCD monitor is adjusted, the recorded video will not change.

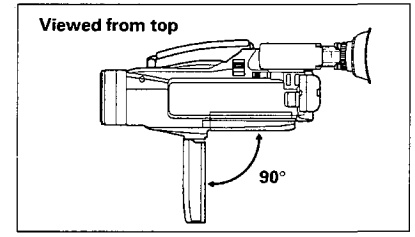
1. Load the battery (Refer to "POWER SOURCES" on page 11). Press the red button on the CAM/OFF/VIDEO switch as you slide it to CAM or VIDEO.

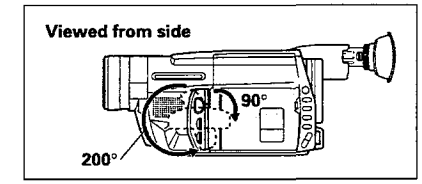


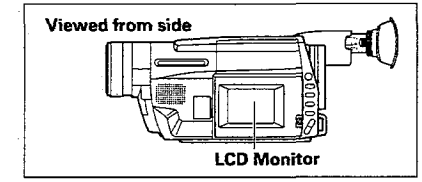
2. Use the bright control on the side of the LCD monitor to adjust the brightness of the LCD screen.



■ Range in which the LCD monitor can be moved







■ Cautions on LCD monitor screen

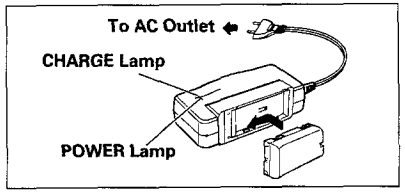
- Do not touch the LCD screen with your fingers as the screen could get dirty and the picture will not be seen clearly. If the LCD screen becomes dirty, use a soft cloth to wipe off the dirt.
- If the camera/recorder is used in a cold place and becomes too cold, the LCD screen will be dim for a while after the power is turned on. When the temperature inside the camera/recorder rises, the brightness of the picture will become normal.
- Do not hold by the LCD monitor as this could cause a malfunction.
- Open the LCD monitor by 90° before changing its direction. If you were to attempt to invert its direction before opening it completely, it could cause a malfunction.
- The LCD monitor cannot be closed if it is tilted.
- Close the LCD monitor after making sure it is parallel with the camera/recorder. If you were to close the monitor while it faces the same direction as the lens or it is diagonal, it could damage the LCD monitor.
- Do not disassemble the LCD monitor as this might cause a malfunction.
- When opening the LCD monitor, be careful that no water droplets adhere the monitor screen and that no water or dust enters the camcorder through the gap as it could cause a malfunction.

CHARGING THE BATTERY

The first step is to set the battery to charge. To charge the battery, use the provided AC adapter/charger.

NOTE: This camera/recorder operates with the lithium ion battery such as VM-BPL13/VM-BPL27.

Charge the battery on a flat surface without vibration.



1. Plug the AC adapter/charger power cord into an AC outlet. The POWER lamp (red) lights up.
2. Align the bottom of the battery with mark ▶ on the AC adapter/charger, and then slide it in the direction of the arrow as shown in the figure.
   The CHARGE lamp (green) lights up.
3. The CHARGE lamp will repeatedly light for 3 seconds and then go off to show that the battery has been charged approximately 70% of full charge. When the CHARGE lamp goes out, the battery has been completely charged. After the lamp goes out, unplug the AC adapter/charger from the AC outlet and remove the battery from the AC adapter/charger.

NOTES:

- You can use the battery before it is completely charged.
- Remove the DC cord from the AC adapter/charger before attempting to charge the battery.
- If you re-attach the fully charged battery to the AC adapter/charger after the CHARGE lamp goes out, the lamp will light. This simply informs you that the battery has been completely charged; it does not indicate that the charge has been insufficient.

Charging time

Charging \ Battery pack	VM-BPL13	VM-BPL27
Full charge	130 min.	230 min.
70% charge	70 min.	140 min.

NOTES:

- Charge the battery at temperatures 0~40°C. At temperatures outside this range, charging will take longer.
- The battery cannot be charged at extremely high or low temperatures. The CHARGE lamp will flash at 2-second intervals to show that charging is not taking place.

Operating time

The camcorder operating time depends on how often you turn power on/off and use start/stop and zoom.

Recording \ Battery pack	LCD monitor	VM-BPL13	VM-BPL27
Continuous recording	OFF	120 min.	270 min.
	ON	100 min.	220 min.
Typical recording	OFF	70 min.	150 min.
	ON	55 min.	120 min.

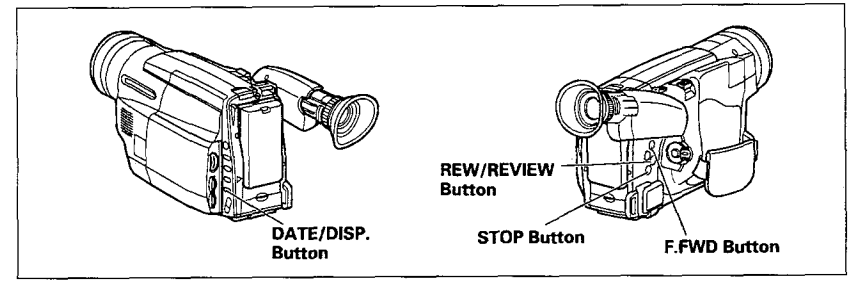
Notes on the battery

- It is recommended that the battery always be left in the discharged state when not in use, and charged before you use it.
- Avoid storing a fully charged battery, and do not store it in a place where the temperature is high: this will damage the battery.
- Do not operate the battery at temperature below –10°C or above 45°C. At extremely low temperatures operation time decreases, while at high temperature the battery may be damaged.
- If the POWER lamp begins to flash during charging, remove the battery and then reattach it to the AC adapter/charger. If the POWER lamp continues to flash after several attempts to attach it, the battery is unable to take a charge and must be replaced.
- Do not attach a hot battery to the AC adapter/charger. Allow it to cool. Attaching a hot battery to the AC adapter/charger causes the POWER lamp to flash.
- There are no user-serviceable parts inside the battery or AC adapter/charger.
- Throwing the battery into fire or exposing it to excessive heat (above 60°C) may cause injury.
- Shorting the battery's terminal increases risk of fire or electrical shock.

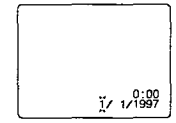
DATE/TIME SETTING

The date and time can be recorded on your tapes to act as a handy reference when viewing them at a later time. Use the following procedure to set up this display for the current date and time.
Make sure that the current time is displayed correctly before you start recording.

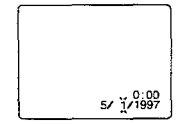
NOTE: Be sure to insert the clock battery before setting the date and time. Although the date and time can be set without the clock battery inserted, they will disappear when the battery providing power to the camera/recorder is removed.



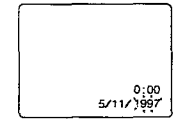
1. Slide the CAM/OFF/VIDEO switch to "CAM".
2. Press the DATE/DISP button.
   "0:00" and "1/1/1997" appears in the viewfinder or LCD monitor and "1" flashes.



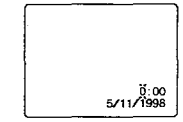
3. Press the F.FWD button to select correct date. Hold button down to advance rapidly. If you go past the date you want to set, press the REW/REVIEW button. When the correct date appears, press the STOP button.



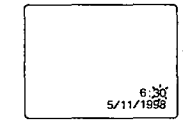
4. Press the F.FWD button to select correct month. Hold button down to advance rapidly. If you go past the month you want to set, press the REW/REVIEW button. When the correct month appears, press the STOP button.



5. Press the F.FWD or REW/REVIEW button to select year, and then press the STOP button.



6. Press the F.FWD or REW/REVIEW button to select correct hour, and then press the STOP button.
7. Press the F.FWD or REW/REVIEW button to select correct minute.



8. After setting to the correct minute, press the DATE/DISP button to change the display and start the internal clock.
   It is recommended that you press the DATE/DISP. button to match the time signal.

NOTE: After the date and time are set, "⏲ AUTO" appears and the camera/recorder enters the automatic date recording mode. See "DATE RECORDING" on page 20.

■ To correct date/time after starting the date/time

1. Press and hold the DATE/DISP. button, and then press STOP button. The date starts flashing.
2. Correct the incorrect digit by using the F.FWD, REW/REVIEW and STOP buttons.

■ To correct date/time during programming

1. Press the STOP button repeatedly until the digit that is incorrect flashes.
2. Correct the incorrect digit by using the F.FWD, REW/REVIEW and STOP buttons.

CHAPTER 2 DISASSEMBLY

1. HOW TO SET TO THE EJECT STATE MANUALLY

This is not necessary for camera/recorders which are set to the eject state normally.

· Type 535, 635, 835 models will not perform the eject operation unless the LCD monitor is open. Do the following if cassette cannot be ejected by pressing the EJECT button after a power supply is connected and the LCD monitor is opened. (Check the connection of PG905 on the VCA board (see Fig. 1-1) and LCD open/close switch.)

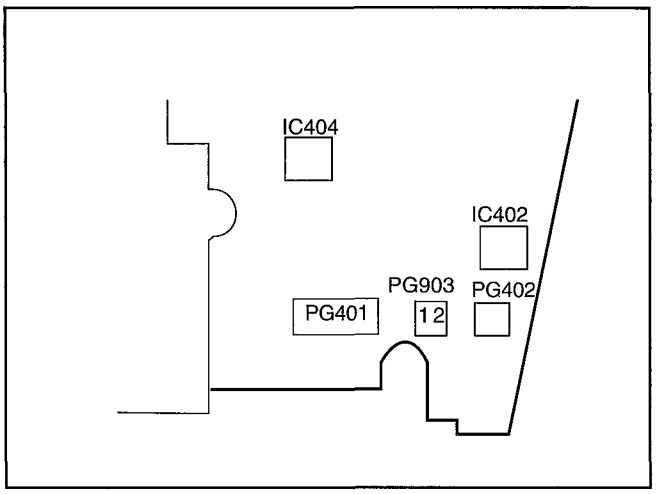


Fig. 1-1

1.1 REMOVE THE CASSETTE LID

<PROCEDURE>

(1) Lift the cassette lid in the direction of arrow (A) and insert tweezers between the cassette lid and left case. (Fig. 1-2)

(2) Release two tabs (C) of the plate spring in the cassette lid in the direction of arrows (B) and remove the cassette lid in the direction of arrow (D).

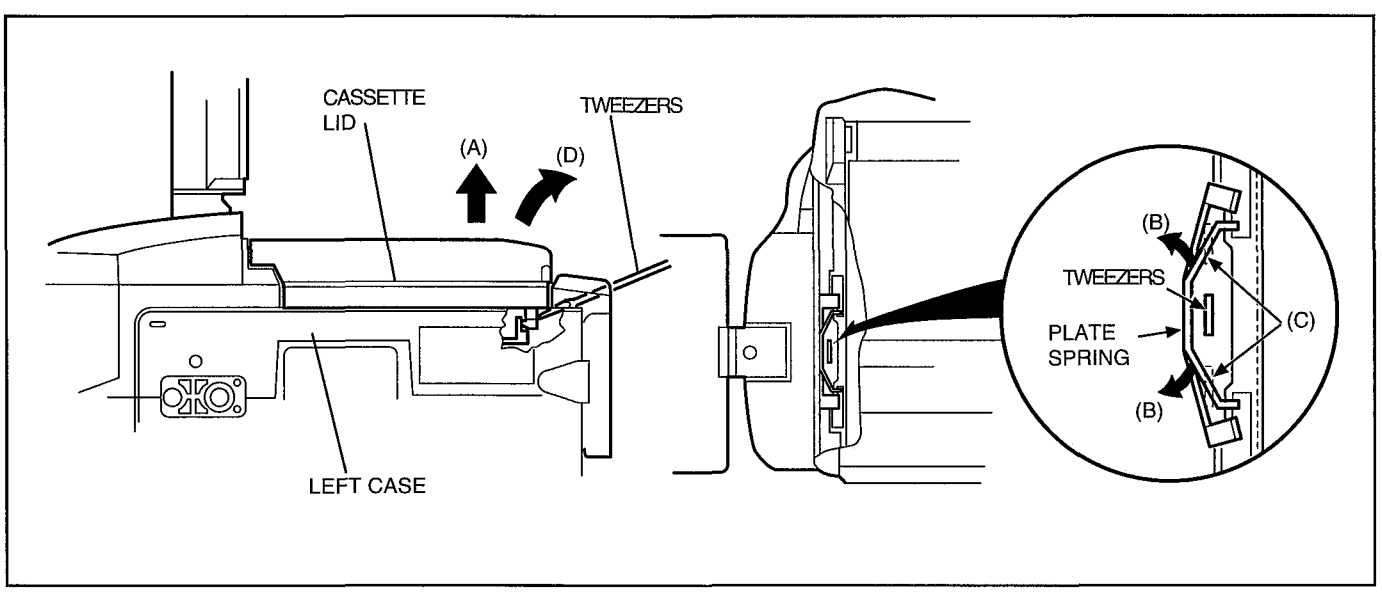


Fig.1-2

1.2 UNLOADING METHOD

If the electrical circuit is defective, apply a voltage to the connector terminals of the loading motor after the components up to the right case block are removed. The camera/recorder can be set to the eject state. (Fig. 1-3)

Be careful of the following when supplying power.

1.2.1 When the Loading Motor is Normal

(Fig. 1-3)

<PROCEDURE>

(1) Set the power supply to 3-5 V DC.

(2) Connect the red wire to the positive terminal and the brown wire to the negative terminal to activate unloading. Connect the brown wire to the positive terminal and the red wire to the negative terminal to activate loading.

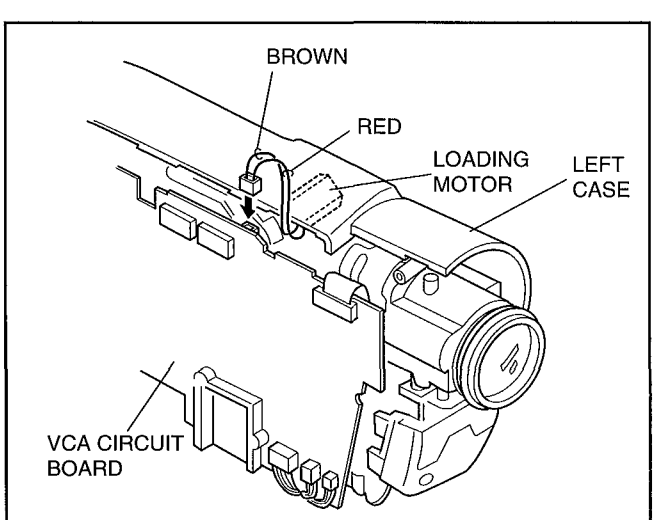


Fig.1-3

1.2.2 When the Loading Motor is Faulty

(Fig.1-4)

<PROCEDURE>

(1) Remove the following parts in advance, referring to subsequent items.
  1) Right Case Block
  2) Main Block, Camera Block, Rear Case
  3) VCA Circuit Board, VCR Frame, Mechanism Block
  4) Loading Motor

(2) Turn the Loading Gear (1) in the direction of arrow (F) to unload.

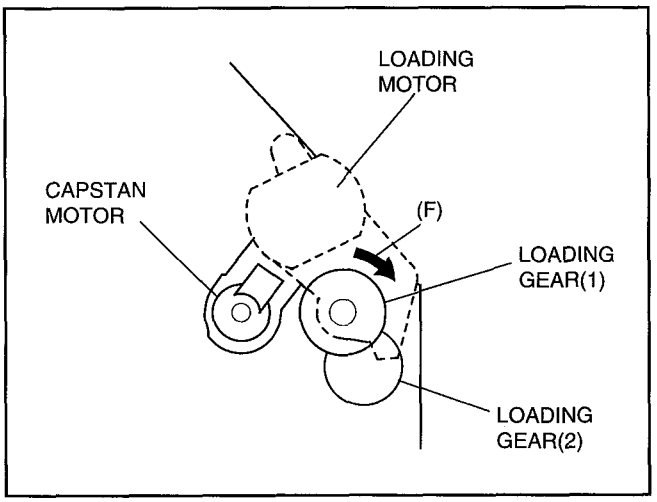


Fig. 1-4

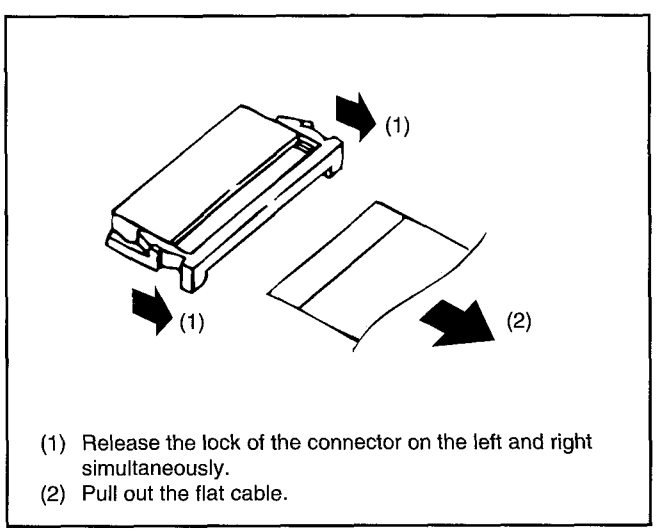
2. BEFORE STARTING DISASSEMBLY

(1) Be sure not to disassemble the lens block.

(2) Set the camera/recorder to the eject state before dismantling it. If the camera/recorder will not enter the eject state due to a defect, refer to "1. HOW TO SET TO THE EJECT STATE MANUALLY".

(3) This camera/recorder will not perform the eject operation unless the LCD monitor is open. To set it to the eject state with the case dismantled, short PG905 pins 1 and 2 on the VCA board with a shorting clip, etc., and then press the EJ ECT button (See Fig. 1-1).

(4) Disconnect flat cables from connectors by the procedure shown in Fig. 2-1. Since many circuit boards in the camera/recorder are connected by in-board connectors, be sure to follow DISASSEMBLY when removing the circuit boards.



(1) Release the lock of the connector on the left and right simultaneously.
(2) Pull out the flat cable.

Fig. 2-1

3. CASES AND CIRCUIT BOARD, MECHANISM BLOCK REMOVAL

Refer to the following "parts hierarchy chart" first when replacing defective parts. This chart shows the parts removal procedure as the hierarchy in which parts should be replaced.

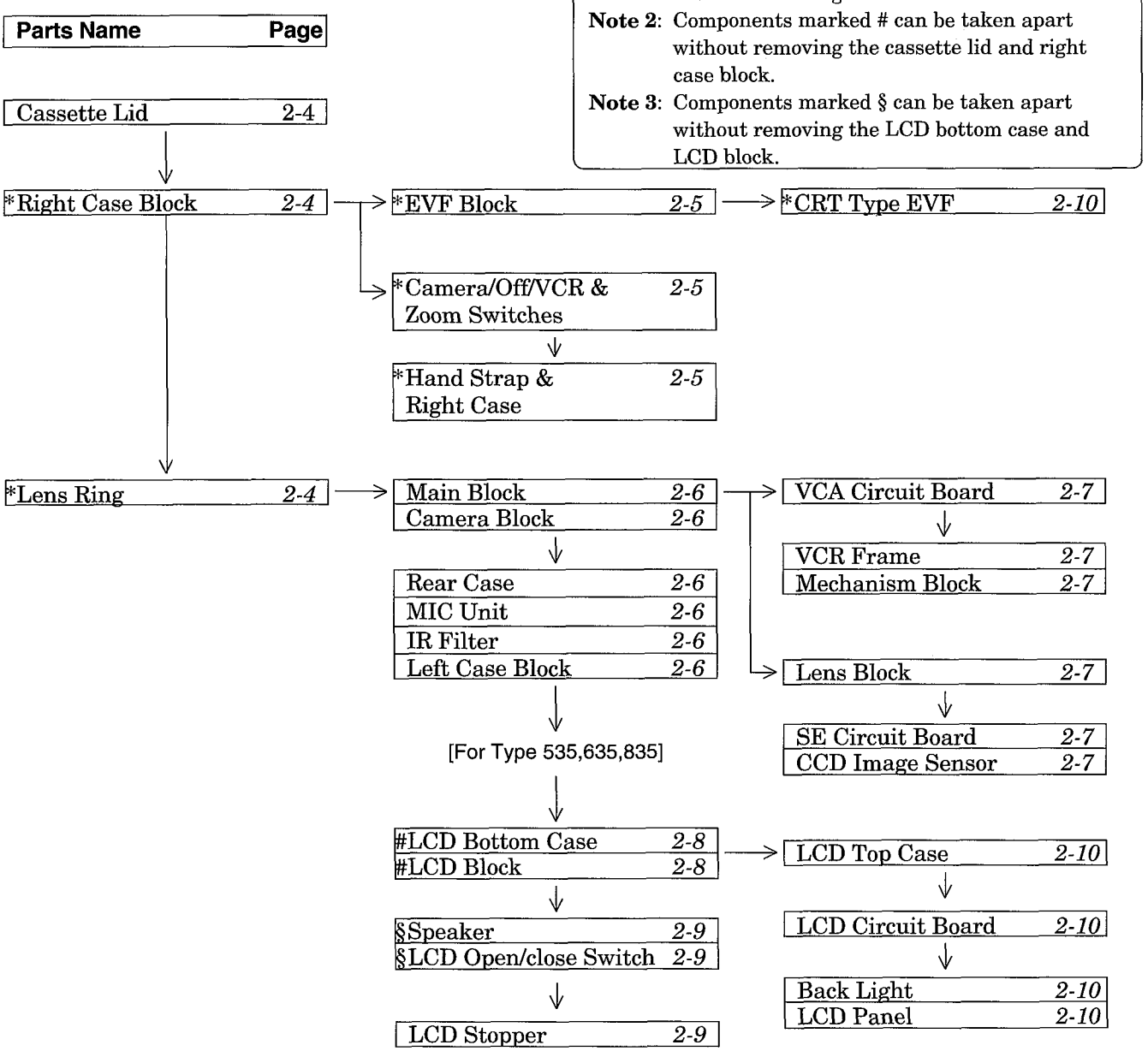
How to use the parts hierarchy chart

(1) Search for the part to be replaced in the chart.
(2) Check the part in the rank above the part to be replaced and then start dismantling.
(3) Replace the defective part and install it by the reverse procedure to that in the hierarchy chart.

(4) **[Procedure when removing]**
Remove the components in the order of number (1, 2, 3....) in the illustrations.
[Procedure when reinstalling]
Reinstall the components by the reverse procedure to removal when not otherwise specified.

PARTS HIERARCHY CHART

Note 1: Components marked * can be taken apart without removing the cassette lid.
Note 2: Components marked # can be taken apart without removing the cassette lid and right case block.
Note 3: Components marked § can be taken apart without removing the LCD bottom case and LCD block.



3.1 CASSETTE LID, RIGHT CASE BLOCK, LENS RING (Fig. 3-1)

<CAUTION>

1) Set the unit to the eject state. (Type 535, 635, 835 models will not perform the eject operation unless the LCD monitor is open.)
2) The rubber O-ring is removed on its own when the lens ring is removed. Be sure to reinstall the rubber ring as shown in Figure A.
3) Open the AV output jack covers of right side before removing the right case block.

<PROCEDURE>

· Cassette Lid Removal: (1)[Type 535, 635, 835]-(2)
· Right Case Block & Lens Ring Removal: (3)-(4)-(5)-(6)-(7)-(8)

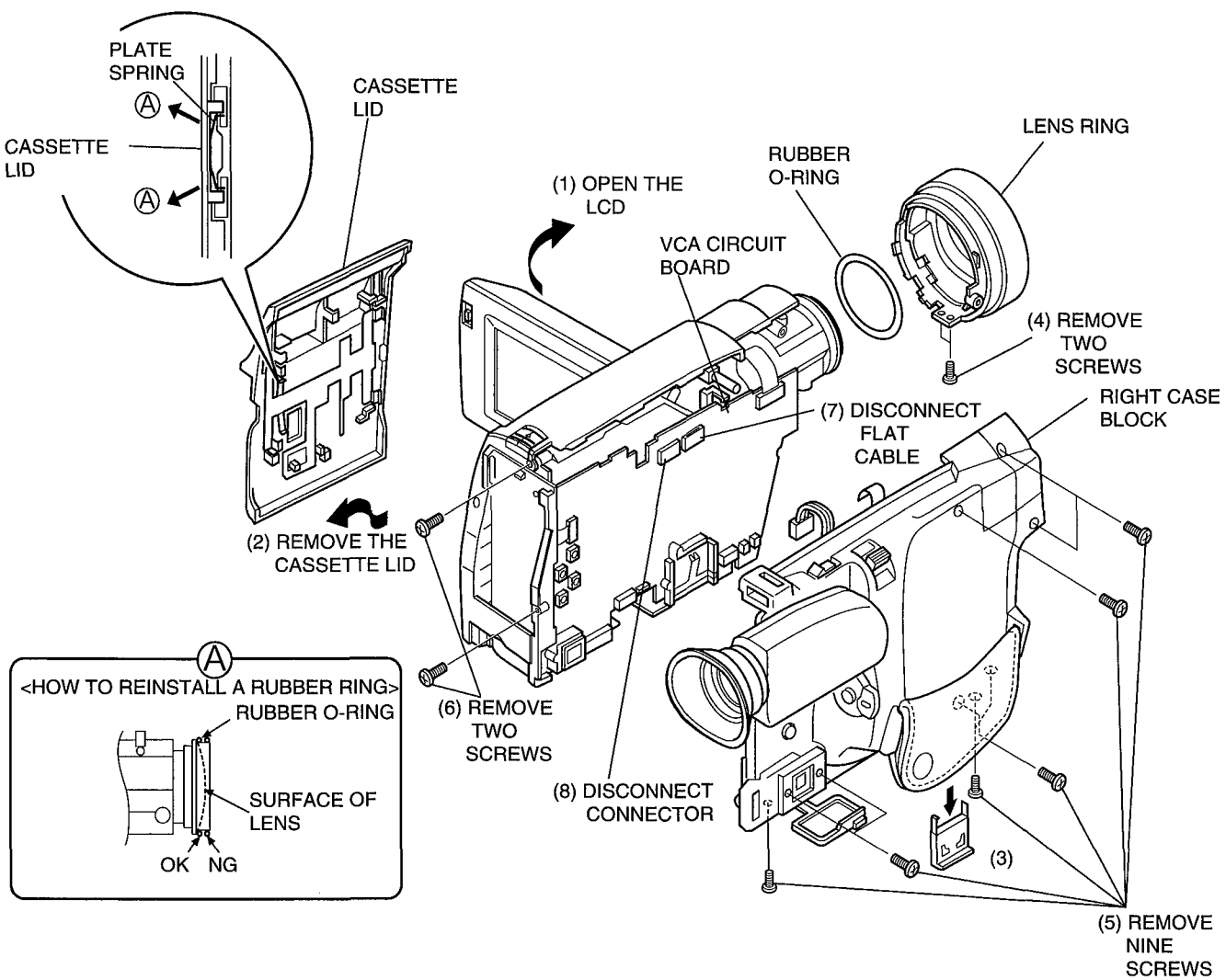


Fig. 3-1

3.2 CAMERA/OFF/VCR & ZOOM SWITCHES, EVF BLOCK, HAND STRAP, RIGHT CASE (Fig. 3-2)

<CAUTION>

1) The EVF plate and plate spring are removed on their own when the EVF block is removed.

<PROCEDURE>

- EVF Block Removal: (1)
- Camera/Off/VCR & Zoom Switches Removal: (2)-(3)
- Hand Strap & Right Case Removal: (2)-(3)-(4)-(5)

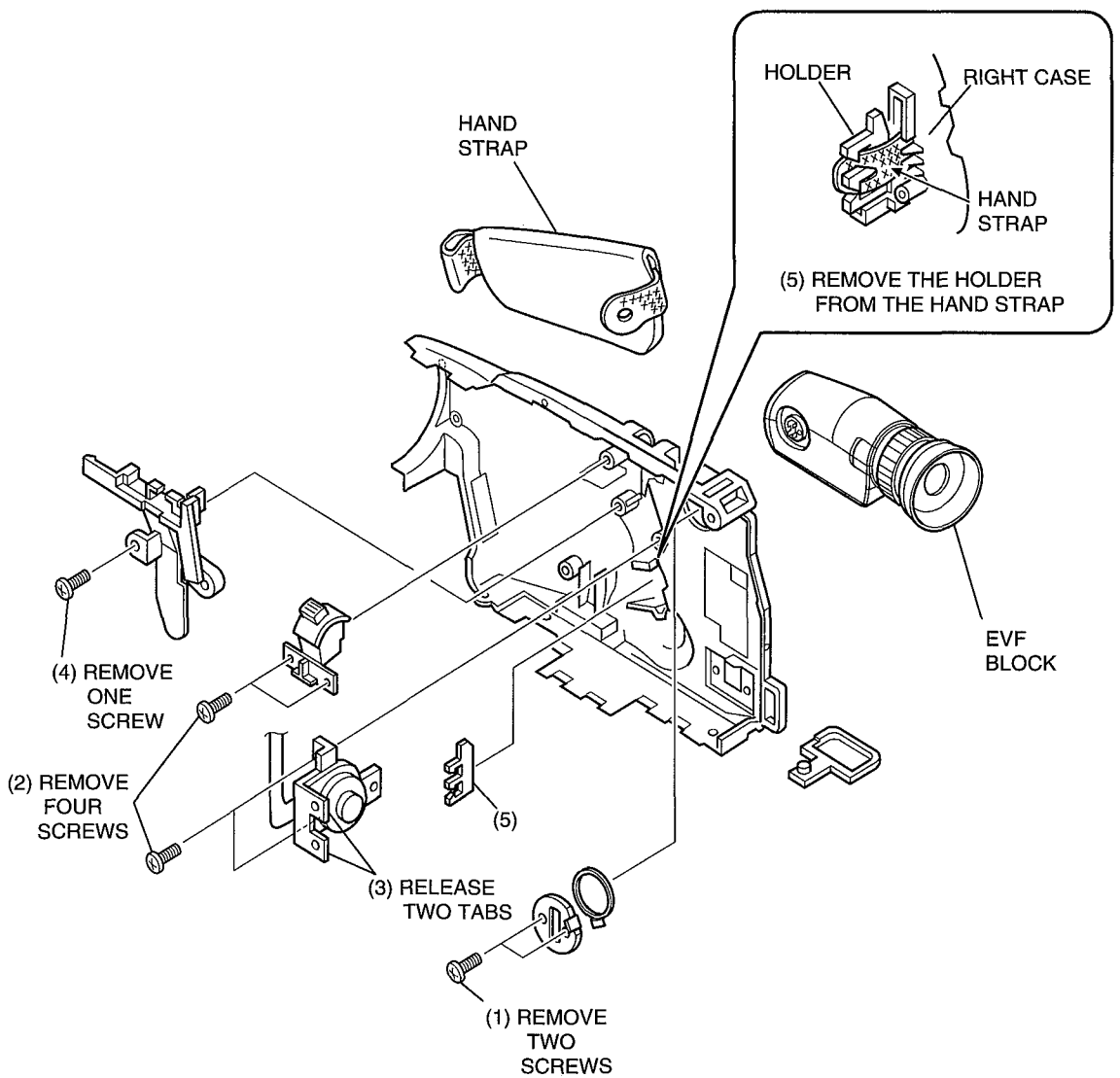


Fig. 3-2

3.3 MAIN BLOCK, CAMERA BLOCK, REAR CASE, MIC(MICROPHONE) UNIT, IR FILTER, LEFT CASE BLOCK (Fig. 3-3)

<CAUTION>

1) Open the AV output jack covers of rear side before removing the rear case.

<PROCEDURE>

· Main Block & Camera Block Removal:
(1)-(2)-(3)-(4)-(5)-(6)-(7)-(8)-(9)

· Rear Case Removal: (1)-(2)-(3)-(4)-(5)-(6)-(7)-(8)-(9)-(10)-(11)

·MIC Unit, IR Filter & Left Case Block Removal:
(1)-(2)-(3)-(4)-(5)-(6)-(7)-(8)-(9)-(12)-(13)-(14)-(15)

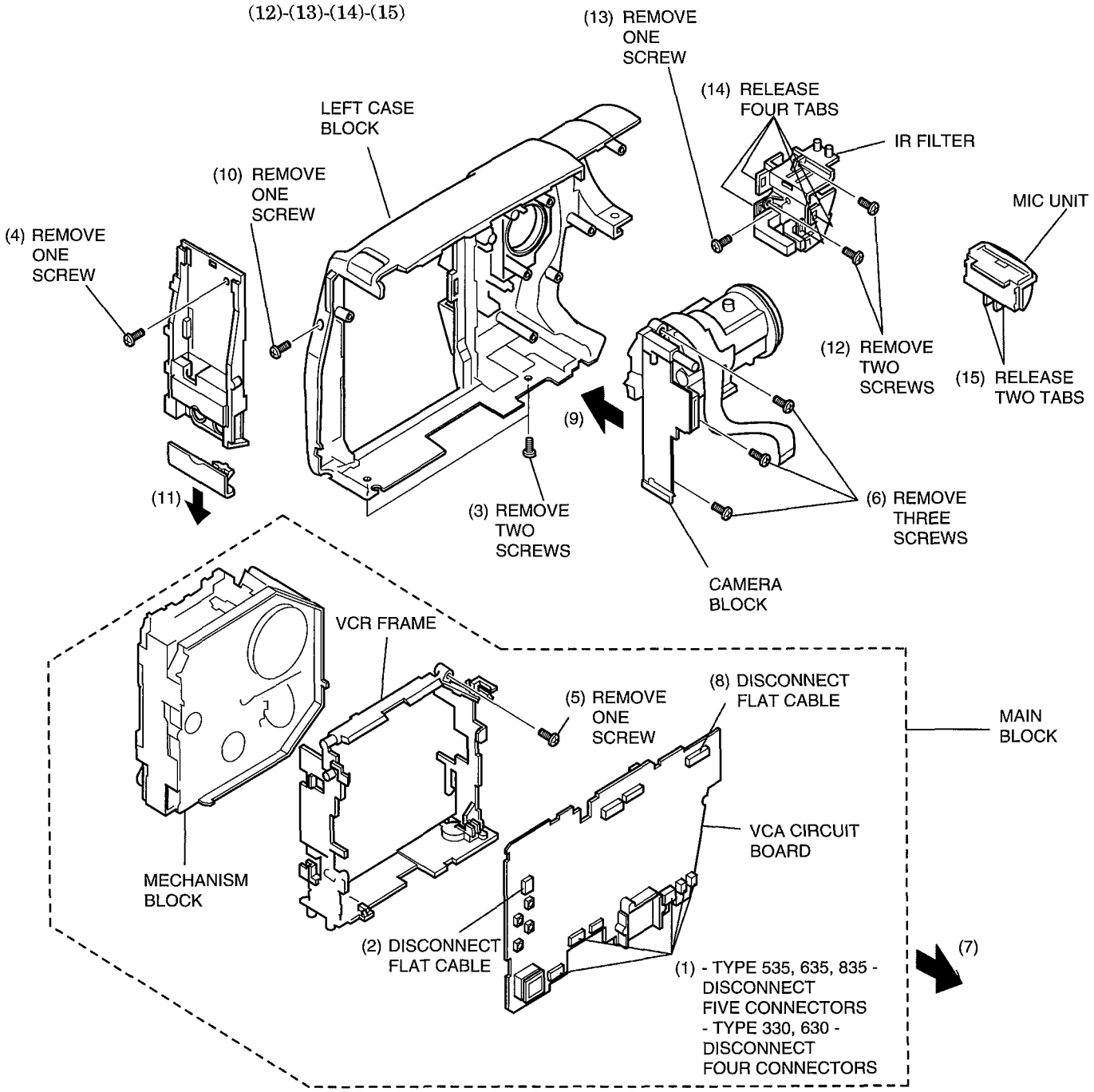


Fig. 3-3

3.4 VCA CIRCUIT BOARD, VCR FRAME, MECHANISM BLOCK (Fig. 3-4)

<PROCEDURE>

· VCA Circuit Board Removal: (1)-(2)-(3)-(4)-(5)

· VCR Frame & Mechanism Block Removal:
(1)-(2)-(3)-(4)-(5)-(6)-(7)

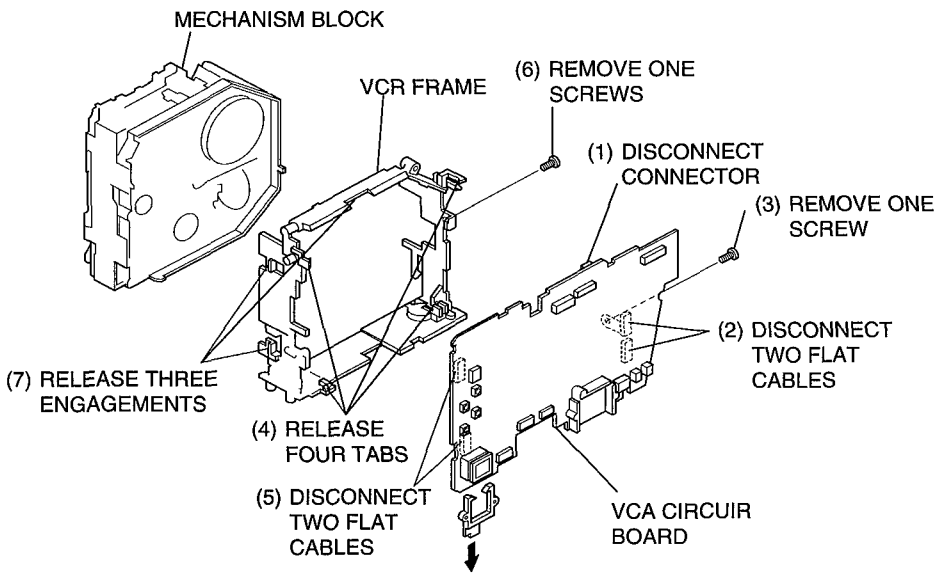


Fig. 3-4

3.5 LENS BLOCK, SE CIRCUIT BOARD, CCD IMAGE SENSOR (Fig. 3-5)

<CAUTION>

1) When the lens block is removed, the crystal filter and sensor rubber are removed on their own. Be careful not to damage the crystal filter.
2) Be sure not to disassemble the lens block. Otherwise the camera/recoder will not operate normally.

<PROCEDURE>

· Lens Block Removal: (1)-(2)-(3)

·SE Circuit Board & CCD Image Sensor Removal:
(1)-(2)-(3)-(4)-(5)

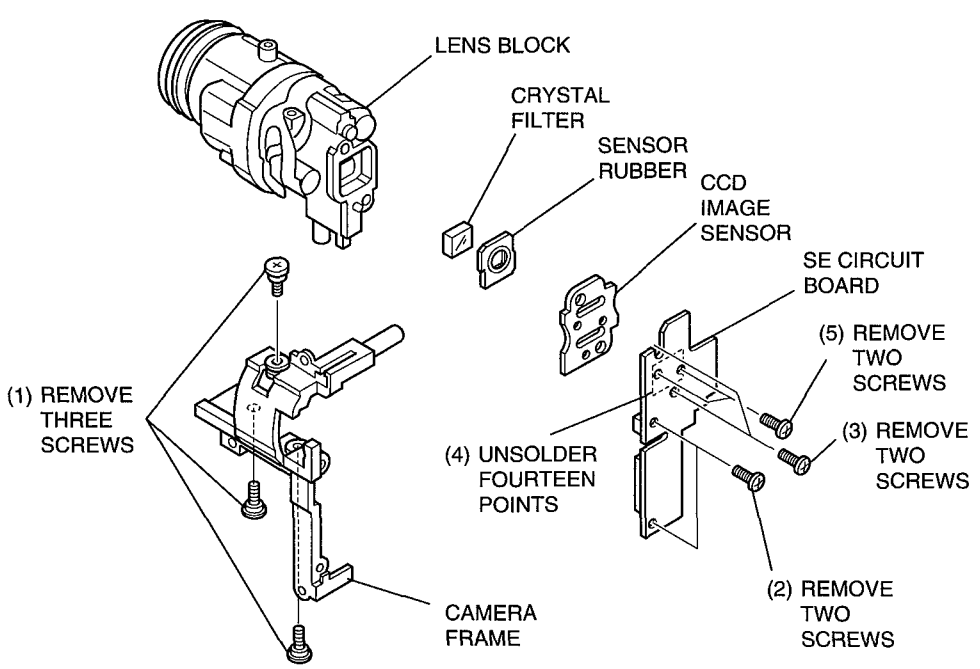


Fig. 3-5

3.6 LCD BOTTOM CASE, LCD BLOCK [For Type 535, 635, 835] (Fig. 3-6)

<CAUTION>

1) Be careful that the LCD screen is not damaged or smudged. (If dirt adheres to it, use a soft cloth to wipe it off.)
2) Handle the LCD panel, light sheet and backlight with extreme care.

<PROCEDURE>

- <PROCEDURE>
- LCD Bottom Case Removal: (1)-(2)-(3)-(4)
- LCD Block Removal: (1)-(2)-(3)-(4)-(5)

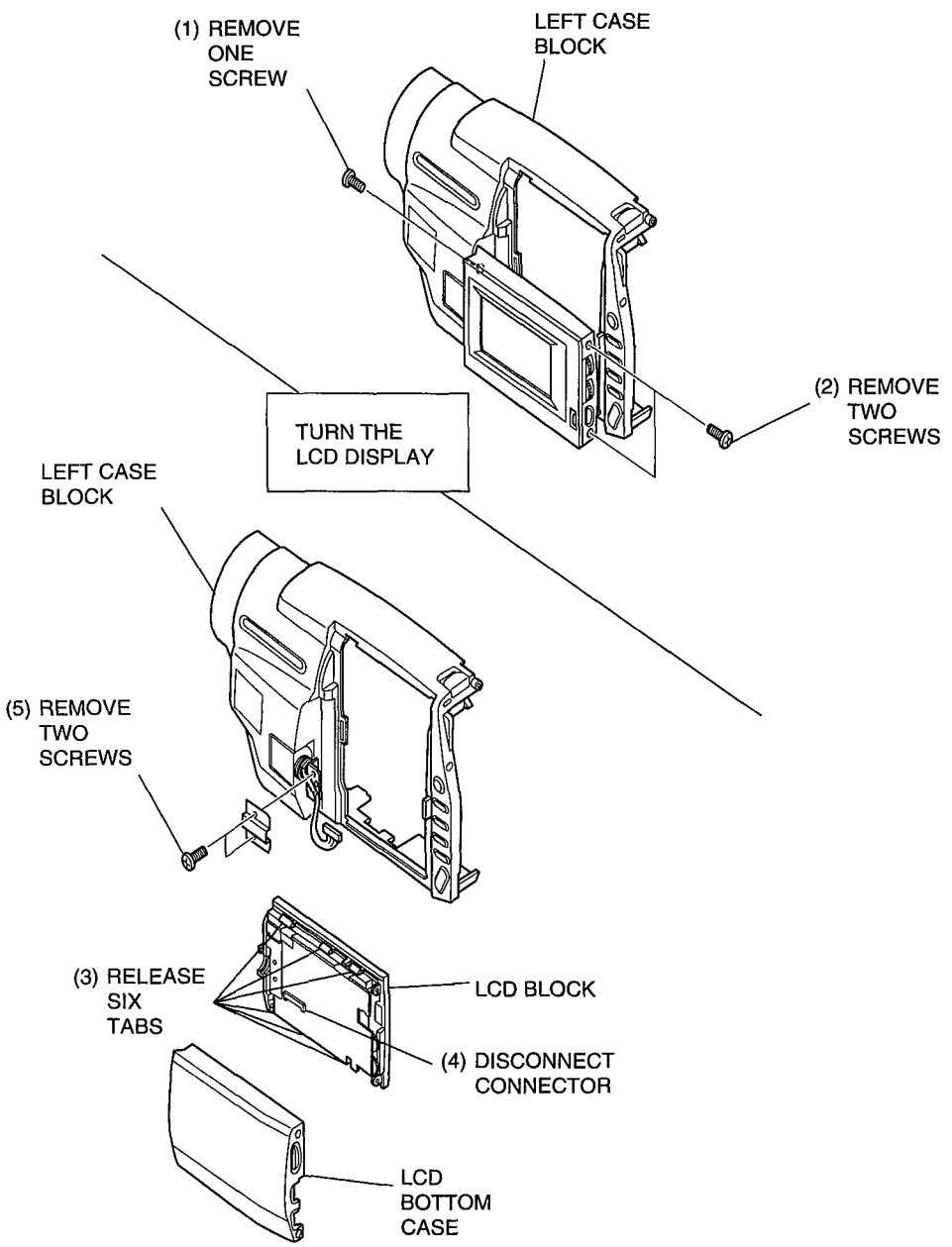


Fig. 3-6

3.7 SPEAKER, LCD OPEN/CLOSE SWITCH, LCD STOPPER [For Type 535, 635, 835] (Fig. 3-7)

<CAUTION>

1) Be careful that the LCD screen is not damaged or smudged. (If dirt adheres to it, use a soft cloth to wipe it off.)
2) Handle the LCD panel, light sheet and backlight with extreme care.

<PROCEDURE>

- Speaker Removal: (1)-(2)
- LCD Open/Close Switch Removal: (1)-(3)-(4)
- LCD Stopper Removal: (1)-(3)-(5)-(6)-(7)

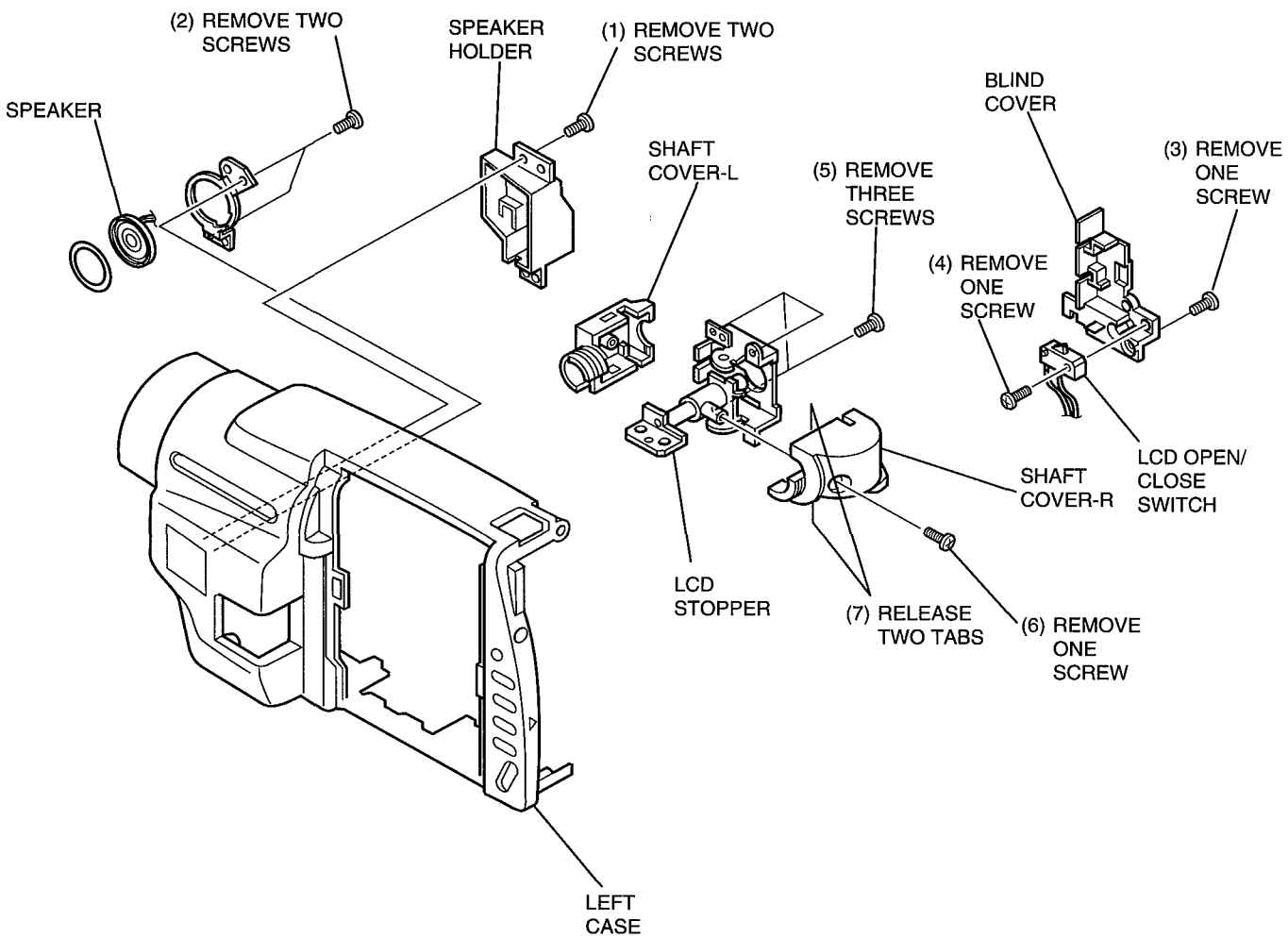


Fig. 3-7

3.8 LCD TOP CASE, LCD CIRCUIT BOARD, BACK LIGHT, LCD PANEL

[For Type 535, 635, 835] (Fig. 3-8)

<CAUTION>

1) Be careful that the LCD screen is not damaged or smudged. (If dirt adheres to it, use a soft cloth to wipe it off.)
2) Handle the LCD panel, light sheet and backlight with extreme care.

<PROCEDURE>

- LCD Top Case Removal: (1)
- LCD Circuit Board Removal: (1)-(2)-(3)
- Back Light & LCD Panel Removal: (1)-(2)-(3)-(4)

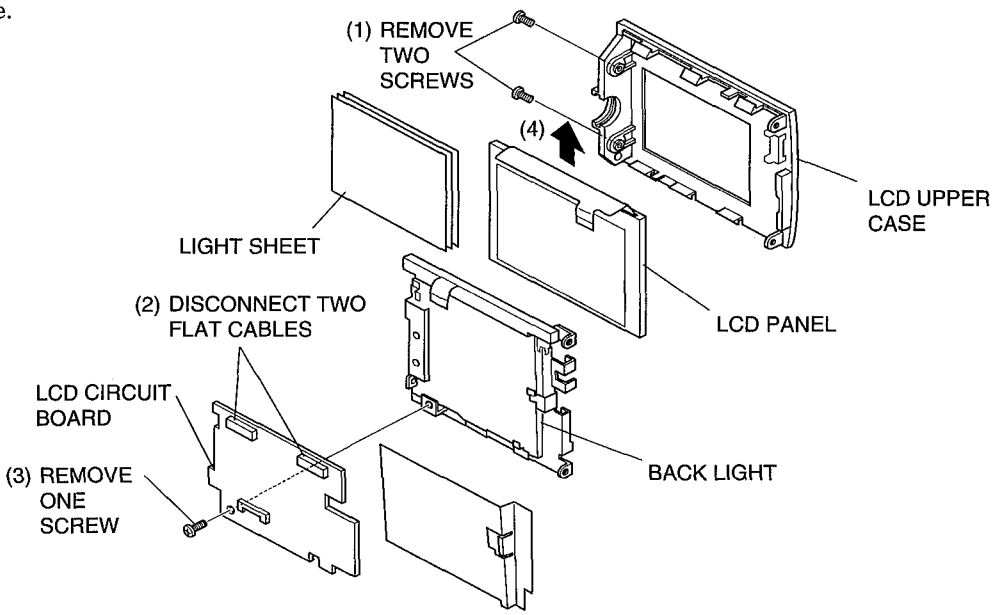


Fig. 3-8

3.9 CRT TYPE EVF (Fig. 3-9)

<CAUTION>

1) Be careful that the CRT is not subject to shocks.

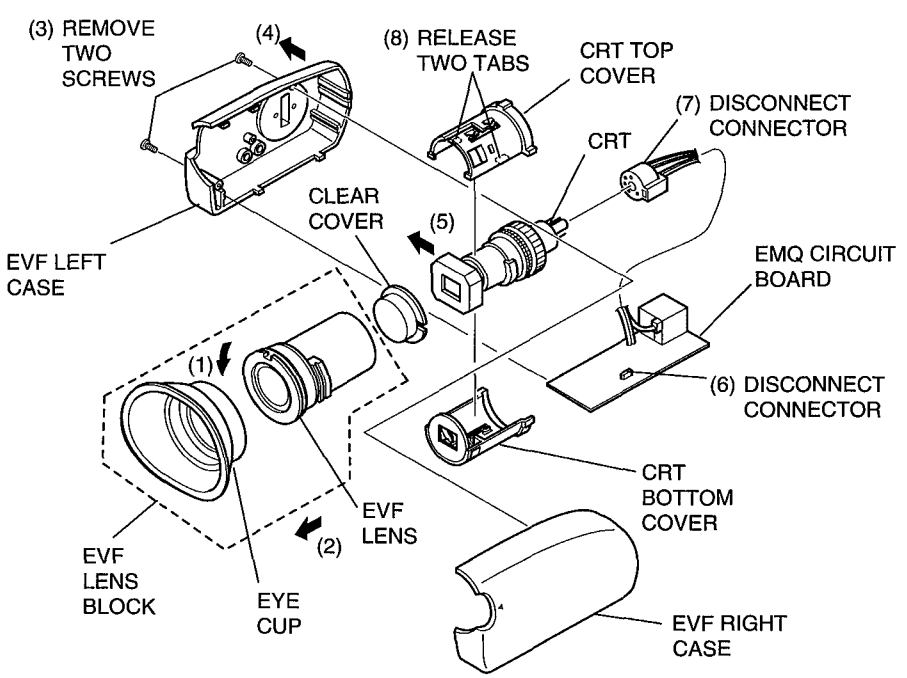


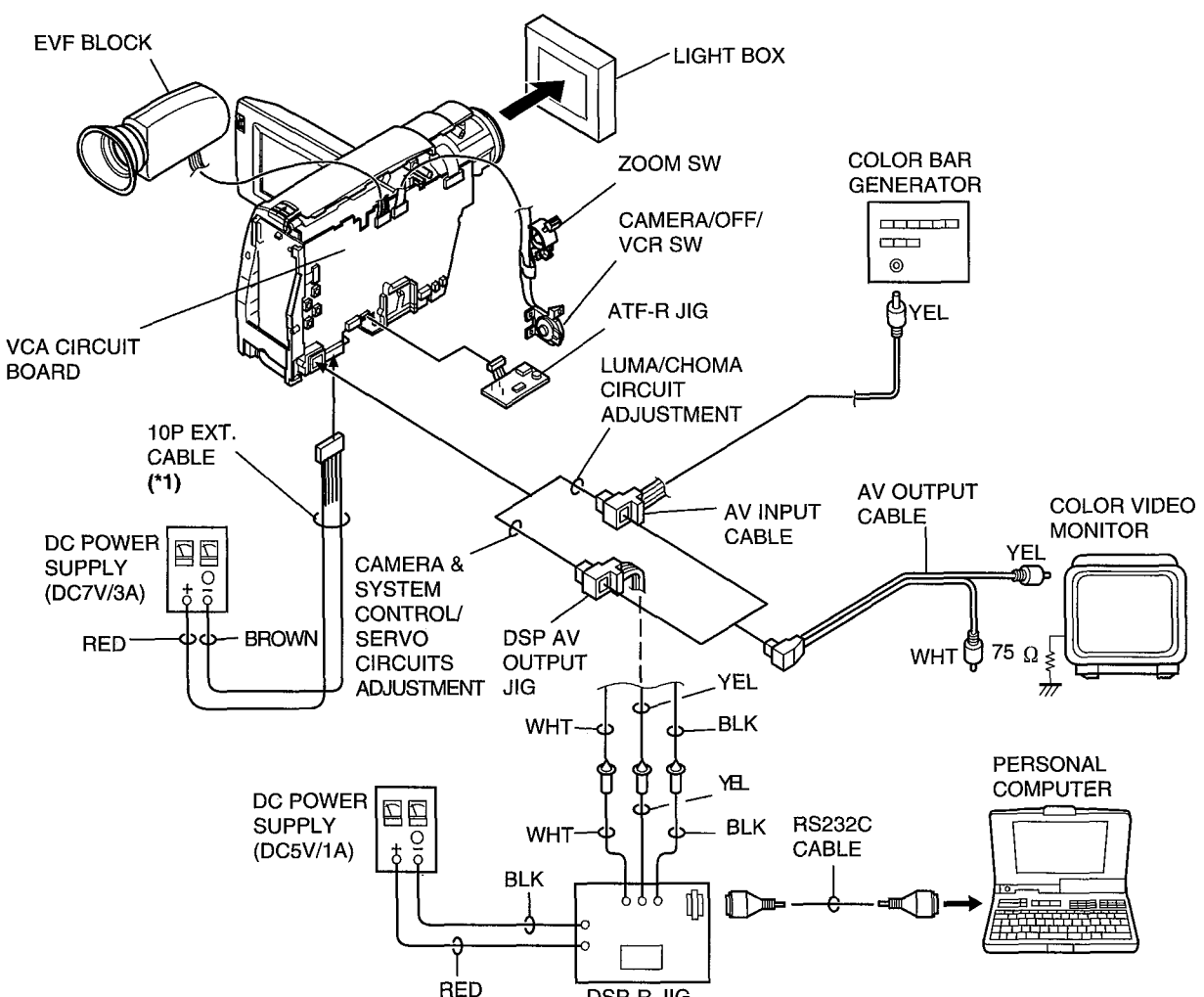
Fig. 3-9

CHAPTER 3 ELECTRIC CIRCUIT ADJUSTMENT

Abbreviation
MAP: Digital adjustment program.
DSP: Digital signal processor

1. CONNECTION FOR ADJUSTMENT

- Most adjustment items can be done without dismantling the camera/recoder.
- Connect the EVF to display the operation mode on the monitor screen.



(*1) 10 Pin Extention Cable (No.7069183)
- Pin 1 and 2: Positive (Red), Pin 6 and 7: Negative (Brown).
- If it is used for the power shutoff level adjustment, short pins 3 and 5 to pin 6 or pin 7 (GND).

Fig. 1-1 Connection for adjustment

2. CAMERA SECTION ADJUSTMENT

2.1 CIRCUIT BOARD LOCATIONS

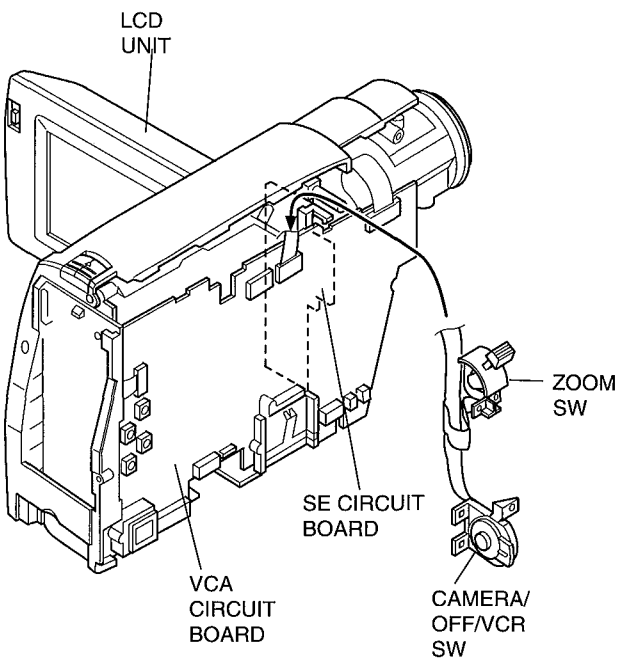


Fig. 2-1

2.2 TEST EQUIPMENT AND CHARTS NECESSARY FOR ADJUSTMENT

Test Equipment

- Oscilloscope (dual trace) [& Vectorscope]
- Digital Voltmeter (DVM)
- Frequency Counter
- Color Video Monitor

Charts, etc.

- Adjustment Floppy Disk
- Personal Computer
- Personal Computer 9-pin or 25-pin (RS232C) Cable
- DSP-R Jig
- DSP AV Output Jig
- Light Box (3100°K)
- Gray Scale Chart
- Color Bar Chart
- Resolution Chart
- Backfocus Adjustment Chart
- Light Balancing Filter C12
- DC Power Supply (DC7V/3A)
- DC Power Supply (DC5V/1A)

2.3 ADJUSTMENT CONDITION

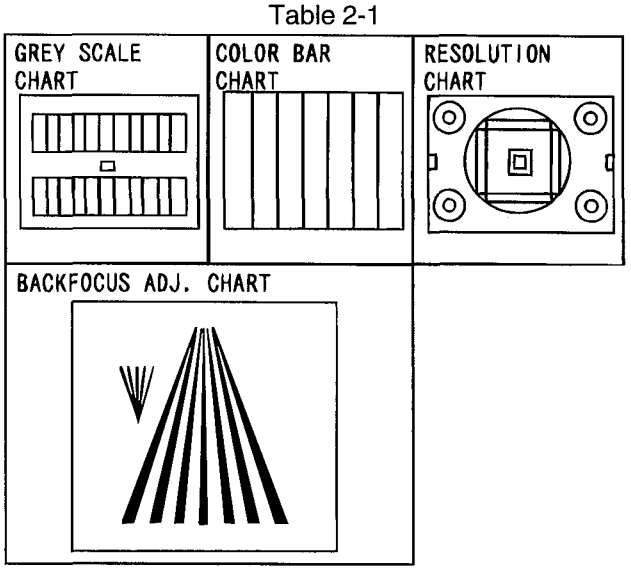
1) Check that the VCR section has been adjusted correctly before adjusting the camera section.
2) Use a light box with minimum flickering. Control the color temperature of the light box strictly.
3) Connect this unit, a power supply and a color video monitor as shown in Fig. 1-1.
4) When using the video out (AV OUT) to perform adjustment, be sure to terminate the AV OUT jack with 75 ohms.
5) Place the chart (light box) approx. 30cm away from the camera (lens surface) when otherwise not specified.
6) Point the camera at the chart to full the video period when otherwise not specified.
7) Use the 10:1 probe of the oscilloscope when otherwise not specified.
8) When "Trigger the oscilloscope internally" is specified, set the time base of the oscilloscope to 10μs/div.

2.4 PRESET POSITIONS OF SWITCHES AND CONTROLS DURING ADJUSTMENT

- CAMERA/OFF/VIDEO switch ..... "CAMERA" position
- INST. ZOOM ..... Not Display mode
- DATE ..... Not Display mode
- DISPLAY ..... Not Display mode
- TITLE ..... Not Display mode
- FOCUS ..... Autofocus mode
- E.I.S ..... OFF mode
- 16 × 9 ..... OFF mode
- FADE ..... OFF mode

2.5 LIST OF CHARTS FOR CAMERA ADJUSTMENT

Table 2-1



2.6 CHECK AFTER REPLACING MAJOR COMPONENTS IN THE CAMERA SECTION

After replacing major components, perform adjustments, referring to the table below.
The following table shows the minimum adjustments required after major components are replaced.
The table below may not apply when several components are replaced, depending on the symptom of the defect.
Caution: When EEP ROM or the VCA circuit board is replaced, initialize the EEP ROM, referring to "2.7.3 Initial Setting by Model" then perform all the camera section and system control/servo circuits adjustments.

ITEM No.	NAME OF ADJUSTMENT	NAME OF MAJOR COMPONENTS										
		SE Board	VCA Board	IC1001	IC1102	IC1104	IC1105	IC1201	IC1401 IC1402	IC1403	Lens Block	
----	Initial Setting by Model		●				●					
ELECTRIC VOLUME ADJUSTMENT PROCEDURE												
(1)	CDS Sampling Pulse Adjust.		●		●		●					
DIGITAL ADJUSTMENT PROCEDURE												
(1)	Auto Iris Control Adjustment	●	●	●		●	●	●			●	
(2)	Matrix Adjustment	●	●	●			●					
(3)	White Balance Adjustment	●	●	●			●					
(4)	Chroma Gain Adjustment	●	●	●			●					
AUTO FOCUS ADJUSTMENT PROCEDURE												
(1)	Zoom Trace Adjustment	●	●	●			●				●	
(2)	AF Noise Level Adjustment	●	●	●			●				●	
STABILIZER ADJUSTMENT PROCEDURE												
(1)	Stabilizer Adjustment	●	●				●		●	●		
SPOT NOISE ADJUSTMENT PROCEDURE												
(1)	Spot Noise Adjustment		●	●			●					

2.7 CAMERA SECTION ADJUSTMENT PROCEDURE

Note
1) To complete adjustment, press the ESC (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.
2) The folloeing describes an example of the instructions of the personal computer and the menu display; they are different depending on the personal computer manufacturer and model. Refer to the instruction manual of personal computer.
3) When the error message appears during adjustment, refer to "4. Error Message". If a key is pressed after an error message appears, the ADJUSTMENT MENU is restored.

2.7.1 Connections for Adjustment

Connect the camera/recorder, DSP jig, personal computer, power supply, etc. as shown in Fig. 1-1.
Check that the camera/recorder is turned on.

2.7.2 How to start the MAP

<PROCEDURE>

1) Turn the personal computer on and start the MS-DOS system. (Fig. 2-2)
2) Load the adjustment floppy disk into disk
   ·drive A and press **A:** then [ENTER].
   or
   ·drive B and press **B:** then [ENTER]. (Fig. 2-3)
3) Press **MAP_IBM** [SPACE] **1** [ENTER].
   The MAP starts and the MODEL SELECT shown Fig. 2-6 appears.
   When you use a personal computer with two serial interface connectors and connect the DSP jig to serial interface connector 2, press MAP_IBM 2.
4) Select the number according to the model.
   If [ESC] (escape) is pressed, the display before the MAP starts (MS-DOS) is restored.
5) Press **Y** key. (Fig. 2-7)
   If **N** key is pressed, the computer's display returns to Fig. 2-6 (MODEL SELECT).

Note

1) If you specify the wrong model, press [ESC] (escape) to restore the MODEL SELECT display, then specify the correct model.
2) If you select number without a model name by mistake, the message shown in Fig. 2-9 will appear in the computer's display.
   Press any key to return the display to Fig. 2-6 (MODEL SELECT).
3) If the required model is not found, press the **P** key and select the model from the next screen.

MESSAGE WHEN OPERATED BY MISTAKE

```
Can not find the DATA FILE
**** PRESS ANY KEY ****
```

Fig. 2-9

```
C>
```

Fig. 2-2

LOAD THE CAMERA ADJ. FLOPPY DISK INTO DISK DRIVE B

Press **A :** [ENTER]

```
C>A:
A>
```

Fig. 2-3

Press **MAP_IBM** [SPACE] **1** [ENTER]

```
C>
A>MAP_IBM 1
```

Fig. 2-4

```
Manual adjustment program for service station
Copyright (C) Hitachi LTD
```

Fig. 2-5

```
**************************************************
                MODEL SELECT
**************************************************
          [1]    xxxxxxx
          [2]    xxxxxxx
          [3]    xxxxxxx
          [4]    xxxxxxx
          [5]    xxxxxxx
          [P]    NEXT SELECTION
          [ESC]  END
      Please select the type of the set.
      Press [1] - [5] or [P] or [ESC]
```

Fig. 2-6

Press numeric key

```
Selected model is x x x x x x x
Are you sure ? (Y/N)
```

Fig. 2-7

Press **Y**

MAIN MENU

```
**************************************************
          MANUAL ADJUSTMENT PROGRAM
**************************************************
          [A]    DATA INITIALIZE
          [B]    ELECTRIC VOLUME
          [C]    ADJUSTMENT
          [D]    VCR ADJUSTMENT
          [E]    AUTO FOCUS
          [F]    EIS
          [G]    SPOT NOISE
          [ESC]  END
      Please select [A] - [G] or [ESC]
```

Fig. 2-8

2.7.3 Initial Setting by Model

Before Starting Initial Setting

1) This item describes how to initialize the EEP ROM. Be sure to perform this item after replacing EEP ROM or the VCA circuit board. When other components are replaced, normally, it is not necessary to initialize the EEP ROM.
   Press [ESC] (escape) to return the computer's display to MAIN MENU.
2) Be sure to perform the following adjustments after completing the initial setting.
   - 2.7.4 Electric Volume Adjustment Procedure
   - 2.7.5 Digital Adjustment Procedure
   - 2.7.6 Autofocus Adjustment Procedure
   - 2.7.7 Stabilizer Adjustment Procedure
   - 2.7.8 Spot Noise Adjustment Procedure
   - 2.9 LCD Color EVF Adjustment Procedure
   - 3.7 System Control/Servo Circuits Adjustment

<PROCEDURE>

1) Start the MAP.
2) Press **A** key to select INITIALIZE. (Figs. 2-10, 2-11)
3) Press **Y** key to start. (Figs. 2-11, 2-12)
   (Press **N** to return to MAIN MENU. (Fig. 2-11))
4) If there are no abnormalities in the camera/recorder, the message shown in Fig. 2-12 is displayed in the computer's display for a while, and then the message informing you that the initial setting has been completed (shown in Fig. 2-13) is displayed.
5) If the message shown in Fig. 2-13 appears in the computer's display, press any key.
   The computer's display returns to Fig. 2-10 (MAIN MENU).

MAIN MENU

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
        Please select [A] - [G] or [ESC]
```

Fig. 2-10

Press **A**

```
« DATA WRITING »
START TO SEND DATA.  (Y/N)
```

Fig. 2-11

Press **Y**

```
« DATA WRITING »
PLEASE WAIT A MOMENT.
```

Fig. 2-12

```
« DATA WRITING »
PLEASE WAIT A MOMENT.
FINISHED WRITING DATA.
PRESS ANY KEY.
```

Fig. 2-13

Press any key to return to Fig. 2-10

2.7.4 Electric Volume Adjustment Procedure

Before Starting Adjstment
When EEP ROM or the VCA circuit board is replaced, initialize the EEP ROM, referring to "2.7.3 Initial Setting By Model" then perform all the electric volume adjustments.

<PROCEDURE>
1) Start the MAP.
2) Press B to select ELETRIC VOLUME. (Figs. 2-14, 2-15)
3) Select the number of the required adjustment.

Note
1) If [ESC] (escape) is pressed, the computer's display returns to Fig. 2-14 (MAIN MENU).
2) To complete adjustment, press the [ESC] (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

MAIN MENU

```
**************************************************
          MANUAL ADJUSTMENT PROGRAM
**************************************************
          [A]    DATA INITIALIZE
          [B]    ELECTRIC VOLUME
          [C]    ADJUSTMENT
          [D]    VCR ADJUSTMENT
          [E]    AUTO FOCUS
          [F]    EIS
          [G]    SPOT NOISE
          [ESC]  END
          Please select [A] - [G] or [ESC]
```

Fig. 2-14

Press **B**

ELECTRIC VOLUME ADJ. MENU

```
**************************************************
          ELECTRIC VOLUME
**************************************************
          [1]    CDS SAMPLING PULSE
          [ESC]  RETURN TO MAIN MENU
          Please select [1] or [ESC]
```

Fig. 2-15

(1) CDS Sampling Pulse Adjustment

Purpose	· To suppress noise in the CCD sensor output signal and maximize the signal level.
Incompleted Phenomenon	· Diagonal beats and horizontal noise occur.
Condition	· Leave the camera/recorder for more than 2 minutes untill the circuits are stabilized after turing it on, then start adjustment.

<PROCEDURE>

ELECTRIC VOLUME ADJ. MENU

```
**************************************************
          ELECTRIC VOLUME
**************************************************
          [1]    CDS SAMPLING PULSE
          [ESC]  RETURN TO MAIN MENU
          Please select [1] or [ESC]
```

Press **1** key to select the CDS SAMPLING PULSE.

```
« ADJUSTMENT OF CDS SAMPLING PULSE »
« NOW ADJUSTING »
```

```
« ADJUSTMENT OF CDS SAMPLING PULSE »
FINISHED WRITING DATA.
ADJUSTMENT COMPLETED.
PRESS ANY KEY.
```

Press any key to return to ELECTRIC VOLUME MENU.

2.7.5 Digital Adjustment Procedure

Before Starting Adjstment
When EEP ROM or the VCA circuit board is replaced, initialize the EEP ROM, referring to "2.7.3 Initial Setting By Model" then perform all the digital adjustments.

Note
If an old light box is used , this adjustnment may not be done. Use the following procedure to adjust without using a light box.
- Illuminate a white sheet of paper using an appropriate light source of 2,000-2,500lux (a halogen light of 3,200K is desirable).
- Point the camera/recoder at the illuminated white sheet of paper to fill the screen as far as possible (at wide-angle).
- Adjust the distance between the camera/ recoder and white sheet of paper so that no error message appears.

<PRROCEDURE>
1) Start the MAP.
2) Press **C** to select ADJUSTMENT. (Figs. 2-16, 2-17)
3) Select the number of the required adjustment.

Note
1) If [ESC] (escape) is pressed, the computer's display returns to Fig. 2-16 (MAIN MENU).
2) To complete adjustment, press the [ESC] (escape) twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

MAIN MENU

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
        Please select [A] - [G] or [ESC]
```

Fig. 2-16

Press **C**

ADJUSTMENT MENU

```
**************************************************
              ADJUSTMENT
**************************************************
        [1]     AUTO IRIS CONTROL
        [2]     MATRIX
        [3]     WHITE BALANCE
        [4]     CHROMA GAIN
        [ESC]   RETURN TO MAIN MENU
        Please select [1]- [4] or [ESC]
```

Fig. 2-17

(1) Auto Iris Control Adjustment

Purpose	· To set the iris control data.
Incompleted Phenomenon	· The picture becomes too bright. · The picture becomes too dark.
Condition	· Point the camera at the light box without a chart to fill the screen (at wide-angle).

<PROCEDURE>

ADJUSTMENT MENU

```
**************************************************
                  ADJUSTMENT
**************************************************
        [1]    AUTO IRIS CONTROL
        [2]    MATRIX
        [3]    WHITE BALANCE
        [4]    CHROMA GAIN
        [ESC]  RETURN TO MAIN MENU
          Please select [1]- [4] or [ESC]
```

Press **1** key to select the AUTO IRIS CONTROL.

```
« ADJUSTMENT OF IRIS OPEN & CLOSE »
PLEASE WAIT AROUND 10 SEC.
```

```
« ADJUSTMENT OF IRIS OPEN & CLOSE »
PLEASE WAIT AROUND 10 SEC.
DATA WRITEN INTO EEPROM
ADJUSTMENT FINISHED
PRESS ANY KEY
```

Press any key, and the display changes as follows.

```
« ADJUSTMENT IRIS »
PLEASE WAIT AROUND 20 SEC.
```

$1

```
« ADJUSTMENT IRIS »
PLEASE WAIT AROUND 20 SEC.
ROUGH ADJUSTMENT     : × × TIMES
FINE ADJUSTMENT      : × × TIMES
ADJUSTMENT FINISHED
PRESS ANY KEY
```

Press any key, and the display changes as follows.

```
« ADJUSTMENT OF HALLCURVE »
PLEASE WAIT AROUND 30 SEC.
```

$2

```
« ADJUSTMENT OF HALLCURVE »
PLEASE WAIT AROUND 30 SEC.
*
ADJUSTMENT POINT 0 1 2 3 4 5 6 7 8 9 A B C
```

```
« ADJUSTMENT OF HALLCURVE »
PLEASE WAIT AROUND 30 SEC.
* * * * * * * * * * * * *
ADJUSTMENT POINT 0 1 2 3 4 5 6 7 8 9 A B C
DATA WRITEN INTO EEPROM
ADJUSTMENT FINISHED
PRESS ANY KEY
```

Press any key, and the display changes as follows.

```
ADJUSTMENT FINISHED
PRESS ANY KEY
```

Press any key to return to ADJUSTMENT MENU.

Turn the power off for 5 seconds and then on again.

Note

1) With some units the following parameter may not be displayed in the display marked *$1*.
   This is normal; continue adjustment.
   ROUGH ADJUSTMENT: × × TIMES
2) The * mark flashes above the numerals and letters in sequence in the display marked *$2*.

(2) Matrix Adjustment (Fig. 2-18)

Purpose	· To compensate for uneveness in the chroma signal.
Incompleted Phenomenon	· Color reproduction becomes defective.
Test Point	· Video Out (AV OUT)
Equipment / Jig	· Oscilloscope
Condition	· Point at a color bar chart.

<PROCEDURE>

ADJUSTMENT MENU

```
**************************************************
                  ADJUSTMENT
**************************************************
        [1]    AUTO IRIS CONTROL
        [2]    MATRIX
        [3]    WHITE BALANCE
        [4]    CHROMA GAIN
        [ESC]  RETURN TO MAIN MENU
          Please select [1]- [4] or [ESC]
```

Press **2** Key to select the MATRIX.

```
« ADJUSTMENT OF BLUE MATRIX »
        ROUGH ADJUSTMENT
[U]             UP
[D]             DOWN

        FINE ADJUSTMENT
[Ctrl] + [U]    UP
[Ctrl] + [D]    DOWN

[ENTER]         RETURN TO MENU
[ESC]           QUIT
```

For Type 330, 535:

Press the **D** key to minimize the yellow (YEL) level.
Press the **U** key so the ratio between yellow (YEL) and blue (BLU) levels is 1:2.
Press the [Ctrl] key and hold it down, then press the **U** and **D** keys so the ratio between yellow (YEL) and blue (BLU) levels is 1:2.

For Type 630, 635, 835:

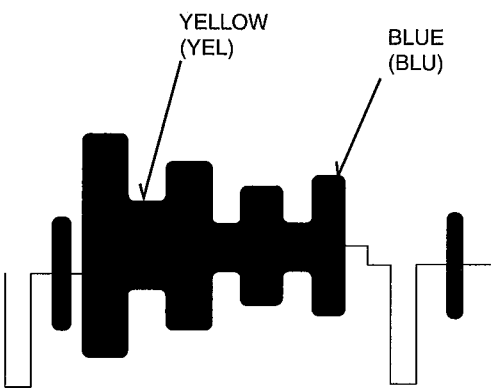
Press the **D** key to minimize the yellow (YEL) level.
Press the **U** key so the ratio between yellow (YEL) and blue (BLU) levels is 2:5.
Press the [Ctrl] key and hold it down, then press the **U** and **D** keys so the ratio between yellow (YEL) and blue (BLU) levels is 2:5.

Press [Enter] Key, and the dispaly changes as follows.

```
« ADJUSTMENT OF BLUE MATRIX »
DATA WRITING TO EEPROM
```

```
« ADJUSTMENT OF BLUE MATRIX »
ADJUSTMENT FINISHED
PRESS ANY KEY
```

Press any key to return to ADJUSTMENT MENU.



	YEL:BLU
Type 330, 535	1 : 2
Type 630, 635, 835	2 : 5

(200mV/50µs.div)

Fig. 2-18

(3) White Balance Adjustment

Purpose	· To set white balance under the color temperature which becomes a reference for the auto white balance circuit.
Incompleted Phenomenon	· Color of the subject is different from that of the picture. · A white subject is not seen as white.
Test Point	· Video Out (AV OUT)
Condition	· Attach a C12 filter. · Point at a gray scale chart (at wide-angle).

<PROCEDURE>

ADJUSTMENT MENU

```
**************************************************
                  ADJUSTMENT
**************************************************
        [1]    AUTO IRIS CONTROL
        [2]    MATRIX
        [3]    WHITE BALANCE
        [4]    CHROMA GAIN
        [ESC]  RETURN TO MAIN MENU
          Please select [1]- [4] or [ESC]
```

Press **3** key to select the WHITE BALANCE.

```
« WHITE BALANCE ADJUSTMENT »
INPUT DATA OF OFFSET  FOR R-B --> 00
```

For Type 330, 535:
Press **1 3** to input the data.

For Type 630, 635, 835:
Press **1 6** to input the data.

Press [Enter] key, and the display changes as follows.

```
« WHITE BALANCE ADJUSTMENT »
INPUT DATA OF OFFSET  FOR Mg-G --> 00
```

For Type 330, 535:
Press **1 0**(ZERO) to input the data.

For Type 630, 635, 835:
Press **1 6** to input the data.

Press [Enter] key, and the display changes as follows.

```
« WHITE BALANCE ADJUSTMENT »
PLEASE WAIT A MOMENT.
```

```
« WHITE BALANCE ADJUSTMENT »
ADJUSTMENT COMPLETED.
COMPLETED EEPROM WRITE.
PRESS ANY KEY.
```

Press any key to return to ADJUSTMENT MENU.

(4) Chroma Gain Adjustment (Figs. 2-19, 2-20)

Purpose	· To set the color saturation under the reference color temperature.
Incompleted Phenomenon	· Color of the picture is denser than that of the subject. · Color of the picture is lighter than that of the subject.
Test Point	· Video Out (AV OUT)
Equipment / Jig	· Oscilloscope (Vectorscope)
Condition	· Attach a C12 filter. · Point at a color bar chart.

<PROCEDURE>

ADJUSTMENT MENU

```
**************************************************
                  ADJUSTMENT
**************************************************
        [1]     AUTO IRIS CONTROL
        [2]     MATRIX
        [3]     WHITE BALANCE
        [4]     CHROMA GAIN
        [ESC]   RETURN TO MAIN MENU
          Please select [1]- [4] or [ESC]
```

Press **4** k to select the CHROMA GAIN.

```
« ADJUSTMENT OF CHROMA GAIN »
          ROUGH ADJUSTMENT
  [U]       CHROMA GAIN UP
  [D]       CHROMA GAIN DOWN

          FINE ADJUSTMENT
  [Ctrl] + [U]   CHROMA GAIN UP
  [Ctrl] + [D]   CHROMA GAIN DOWN

  [ENTER]   SAVE & RETURN TO MENU
  [ESC]     QUIT
```

WHEN USING AN OSCILLOSCOPE:

Press the **U** and **D** keys to set the red level to around 450mVp-p.

Press the [Ctrl] key and hold it down, then press the **U** and **D** keys so the red level is 450mV ± 20mVp-p. (Fig. 2-19)

WHEN USING A VECTORSCOPE:

Press the **U** and **D** keys to set the red vector to around 160% of the burst.

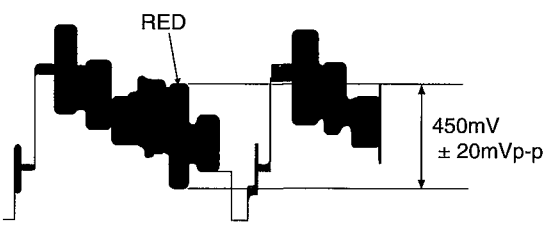
Press the [Ctrl] key and hold it down, then press the **U** and **D** keys so the red vector is 160% ± 5%. (Fig. 2-20)

Press [Enter] key, and the display changes as follows.

```
« ADJUSTMENT OF CHROMA GAIN »
DATA WRITING INTO EEPROM.
```

```
« ADJUSTMENT OF CHROMA GAIN »
ADJUSTMENT FINISHED.
PRESS ANY KEY.
```

Press any key to return to ADJUSTMENT MENU.



(200mV/10µs.div)

Fig. 2-19

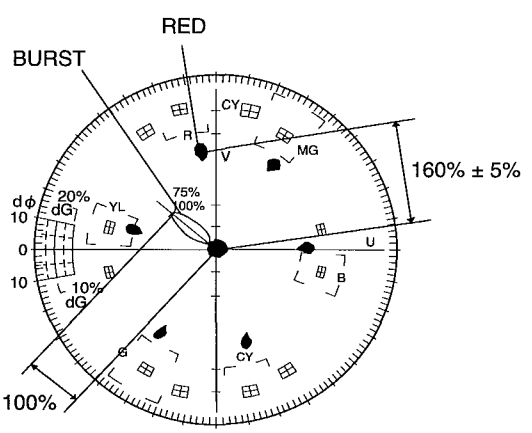


Fig. 2-20

2.7.6 Autofocus Adjustment Procedure

Before Starting Adjustment
Be sure to perform this adjustment after replacing or initializing the lens block, parts in the VCA circuit board (EEPROM).

<PRROCEDURE>
1) Start the MAP.
2) Press **E** to select AUTO FOCUS. (Figs. 2-21, 2-22)
3) Select the number of the required adjustment.

Note
1) If [ESC] (escape) is pressed, the computer's display returns to Fig. 2-21 (MAIN MENU).
2) To complete adjustment, press the [ESC] (escape) twice to restore the MS-DOS screen and then turn off the camera/recorder and jig.

MAIN MENU

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
          Please select [A] - [G] or [ESC]
```

Fig. 2-20

Press **E**.

AF ADJ. MENU

```
**************************************************
        AUTO FOCUS ADJUSTMENT
**************************************************
[1]     ADJUSTMENT OF ZOOM/FOCUS TRACKING
[2]     ADJUSTMENT OF AF NOISE LEVEL
[ESC]   RETURN TO MENU
          Please select [1], [2] or [ESC]
```

Fig. 2-21

(1) Zoom Trace Adjustment

Purpose	· To set the out-of-focus correction level during zooming.
Incompleted Phenomenon	· Focus is lost during zooming.
Equipment / Jig	· Color Video Monitor · Backfocus Chart
Test Point	· Video Out (AV OUT)
Condition	· Point at the backfocus chart, 1500 ± 5 mm away from the lens surface. · Light the chart with 200-400 lux.

Caution When Adjustment

1) Measure the distance between the chart and lens surface precisely.
2) Place the chart as parallel as possible to the lens surface.
3) The backfocus chart should always be at the center of the monitor screen when the zoom is set to the wide-angle and telephoto ends.
4) The zoom trace adjustment procedure is completed within 2 minutes after it is selected.
5) Do not place any obstruction between the lens and chart during adjustment.

<PROCEDURE>

AF ADJ. MENU

```
**************************************************
        AUTO FOCUS ADJUSTMENT
**************************************************
[1]     ADJUSTMENT OF ZOOM/FOCUS TRACKING
[2]     ADJUSTMENT OF AF NOISE LEVEL
[ESC]   RETURN TO MENU
          Please select [1], [2] or [ESC]
```

Press **1** key to select ADJUSTMENT OF ZOOM/FOCUS TRACKING

```
« ADJUSTMENT OF ZOOM/FOCUS TRACKING »
          |         |         |
         0%       50%      100%
```

```
« ADJUSTMENT OF ZOOM/FOCUS TRACKING »
          ■■■■■■■■■■■■■■■■■■■■
         0%       50%      100%
        ADJUSTMENT COMPLETED.
          PRESS ANY KEY.
```

Press any key to return to AF ADJ. MENU.

(2) AF Noise Level Adjustment

Purpose	· To set the noise level.
Incompleted Phenomenon	· It takes time until a subject is brought into focus.
Equipment / Jig	· Correct focus is not obtained. · Color Video Monitor
Test Point	· Video Out (AV OUT)
Condition	· Set the focus to AUTO. · Point at a light box without a chart inserted at a distance of up to 10cm.
Caution When Adjustment	
1) Place the light box as parallel as possible to the lens surface. 2) The AF noise level adjustment procedure will be completed within thirty seconds after it is selected.	

<PROCEDURE>

AF ADJ. MENU

```
**************************************************
          AUTO FOCUS ADJUSTMENT
**************************************************
[1]    ADJUSTMENT OF ZOOM/FOCUS TRACKING
[2]    ADJUSTMENT OF AF NOISE LEVEL
[ESC]  RETURN TO MENU
          Please select [1], [2] or [ESC]
```

Press **2** key to select ADJUSTMENT OF AF NOISE LEVEL.

```
« ADJUSTMENT OF AF NOISE LEVEL »
0%        50%        100%
```

```
« ADJUSTMENT OF AF NOISE LEVEL »
0%        50%        100%
ADJUSTMENT COMPLETED.
PRESS ANY KEY.
```

Press any key to return to AF ADJ. MENU.

2.7.7 Stabilizer Adjustment Procedure

[For Type 630, 635, 835]

Before Starting Adjustment

- Be sure to perform this adjustment after replacing or initializing the SP circuit board and VCA circuit board (EEPROM).
- This item describes how to rewrite the stabilizer data. The average of the stabilizer data will be written.

<PRROCEDURE>

1) Start the MAP.
   - If [ESC] (escape) is pressed, the computer's display returns to MAIN MENU.
   - To complete adjustment, press the [ESC] (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jig
2) Press **F** to select EIS.
3) Prees **Y** key.
   - If **N** key is pressed, the computer's display returns to MAIN MENU.
   - If a key other than **Y** or **N** key is pressed, "PLEASE SELECT (Y/N)?" is displayed.
4) The stabilizer data is rewritten automatically.
5) Press any key to return to MAIN MENU.

MAIN MENU

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
          [A]    DATA INITIALIZE
          [B]    ELECTRIC VOLUME
          [C]    ADJUSTMENT
          [D]    VCR ADJUSTMENT
          [E]    AUTO FOCUS
          [F]    EIS
          [G]    SPOT NOISE
          [ESC]  END
          Please select [A] - [G] or [ESC]
```

Press **F**.

```
« DATA WRITING »
START TO SEND DATA (Y/N)
```

Press **Y**.

```
FINISHED WRITING DATA.
PRESS ANY KEY.
```

Press any key to return to MAIN MENU.

2.7.8 SPOT NOISE ADJUSTMENT PROCEDURE

Before Starting Adjustment

- The spot noise is identified as the fine white noise that appears when the lens cap is attached after the power is turned on.
- Perform this adjustment only for products with which spot noise occurs. (However, there is no problem even if products free from spot noise are adjusted.)
- After replacing the CCD image sensor or VCA circuit board (EEPROM), check whether or not spot noise occurs and then proceed with adjustment.

<PRROCEDURE>

1) Start the MAP.
   - If [ESC] (escape) is pressed, the computer's display returns to MAIN MENU.
   - To complete adjustment, press the [ESC] (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jig
2) Cap the lens.
3) Connect the color video monitor to video out.
4) Press **G** to select SPOT NOISE.

Note
The adjustment procedure in this item is different depending on the amount of spot noise.

MAIN MENU

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
        Please select [A] - [G] or [ESC]
```

Press **G**.

Note: The amount of spot noise is display in place marked ×.

One spot noise

```
**********************************
        SPOT NOISE COMPENSATE
**********************************
        A SPOT NOISE FOUND.
        PRESS ANY KEY.
```

Much spot noise

```
**********************************
        SPOT NOISE COMPENSATE
**********************************
        × SPOT NOISE FOUND.
        PRESS ANY KEY.
```

Spot noise is not defected (When camera/recorder free from spot noise are adjusted)

```
**********************************
        SPOT NOISE COMPENSATE
**********************************
        CANNOT FIND THE SPOT NOISE.
        PRESS ANY KEY.
```

Press any key to return to MAIN MENU.

Press any key.

(A)

(A)

```
**************************************************
              SPOT NOISE COMPENSATE
**************************************************
     CAN YOU SEE THE BLINKING CURSOR ?(Y/N)
```

A cursor blinks in the section where spot noise occurs on the monitor screen.

YES → Press **Y** Key.

NO → Press **N** Key.

```
**************************************************
              SPOT NOISE COMPENSATE
**************************************************
          LOOK AT THE CURSOR POINT.
 WHILE YOU CAN SEE THE SPOT NOISE,
                          PRESS SPACE KEY.
 IF THE SPOT NOISE CLEARS,
                THEN PRESS ENTER KEY.
```

Check whether or not spot noise disappears after auto adjustment is completed.

If it does not disappear: Press the space key.

If it disappears: Press the enter key.

```
**************************************************
              SPOT NOISE COMPENSATE
**************************************************
     THIS SPOT NOISE IS IN THE
                          BLANKING AREA OF TV.
               PRESS ANY KEY.
```

Press any key.

There are other occurrences of spot noise. → (A)

Spot noise compensation is completed.

```
**************************************************
              SPOT NOISE COMPENSATE
**************************************************
                    COMPLETE.
                PRESS ANY KEY.
```

Press any key to Return to MAIN MENU.

2.8 ELECTRONIC VIEWFINDER (EVF) ADJUSTMENT

2.8.1 Adjustment Parts Location

Note: Picture appears on the EVF only when the LCD monitor is closed.

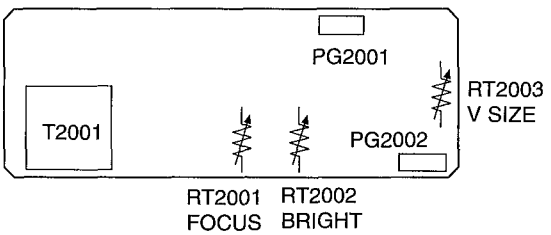


Fig. 2-51 EVF Circuit Board (Side-B)

2.8.2 Adjustment Procedure

(1) Deflection Yoke Position, EVF Centering Adjustment

Purpose	· This adjustment procedure eliminates picture tilt in the EVF display. · This adjustment centers the image observed by the camera in the EVF display.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· EVF Dispaly		· Aim the resolution chart	· Deflection Yoke (Deflection Yoke Position) · Centering Magnets (EVF Centerig)

Adjustment procedure

Deflection Yoke Position

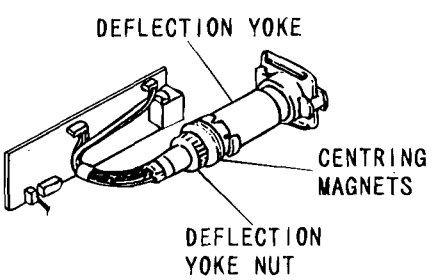
1) Loosen the deflection yoke nut.
2) Turn the deflection yoke so that the EVF picture (chart) is horizontal, matching the edges of the CRT.

Note: After adjustment is completed, tighten the deflection yoke nut.

EVF Centring

1) Remove the locking paint from the centring magnet.
2) Adjust the centring magnets until the center of the picture viewed by the camera is positioned in the center of the EVF display.

Adjustment Point



(2) EVF Vertical Size Adjustment (Fig. 2-51)

Purpose	· This adjustment determines the vertical size of the image appearing in the EVF display.		
Equipment/Jigs	**Test Points**	**Condition**	**Ajustment point**
· EVF Dispaly		· Aim the resolution chart	· RT2003 (V.SIZE) EVF

Adjustment procedure

1) RT2003: Set the top and bottom edges of the chart match the top and bottom edges of the CRT.

(3) EVF Brightness Adjustment (Fig. 2-51)

Purpose	· This adjustment sets the brightness of the picture in the EVF display.		
Equipment/Jigs	**Test Points**	**Condition**	**Ajustment point**
· EVF Dispaly		· Aim the resolution chart	· RT2002 (BRIGHT) EVF

Adjustment procedure

1) RT2002: Set to optimize the EVF picture.

(4) EVF Focus Adjustment (Fig. 2-51)

Purpose	· This control adjusts for optimum focus of the electronic viewfinder picture.		
Equipment/Jigs	**Test Points**	**Condition**	**Ajustment point**
· EVF Dispaly		· Aim the resolution chart	· RT2001 (FOCUS) EVF

Adjustment procedure

1) RT2001: Set the EVF picture is clear.

2.9 COLOR LCD DISPLAY ADJUSTMENT [For Type 535, 635, 835]

2.9.1 Adjustment Parts Location

Note: Picture appears on the LCD only when the LCD monitor is open. To displa y a picture while the case (LCD OPEN/ CLOSE switch) is off, short pins 1 and 2 of PG905 on the VCA board using a shorting clip, etc.

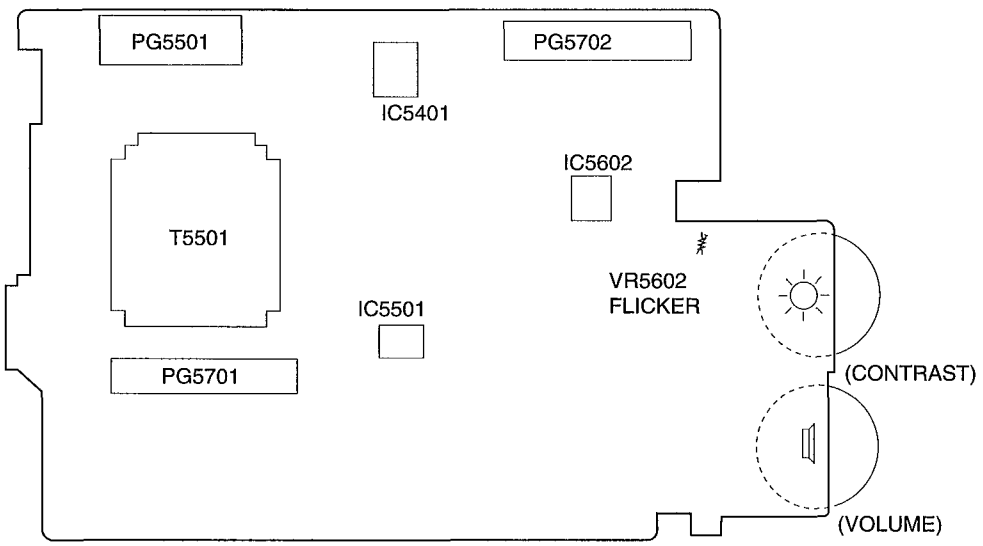


Fig. 2-101 LCD Circuit Board (Side-B)

2.9.2 Adjustment Procedure

(1) LCD Flicker Adjustment (Fig. 2-101)

Be sure to perform this adjustment after replacing the LCD board and LCD panel.

Purpose	· To minimize flickering in the LCD picture.		
Incompleted Phenomenon	· Color quality of the LCD picture declines. · Contrast of the LCD picture becomes duller.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Alignment Tape · LCD Display		· Playback the alignment tape (Color Bar) · Set the BRIGHT control to center click position.	RV5602 LCD (FLICKER)

Adjustment procedure

1) VR5602:
To optimize the tint of color bars. (When the variable resistor is moved one turn, there will be a range where the picture does not change. Perform adjustment outside this range.)

3. VCR SECTION ADJUSTMENT

3.1 CIRCUIT BOARD LOCATIONS

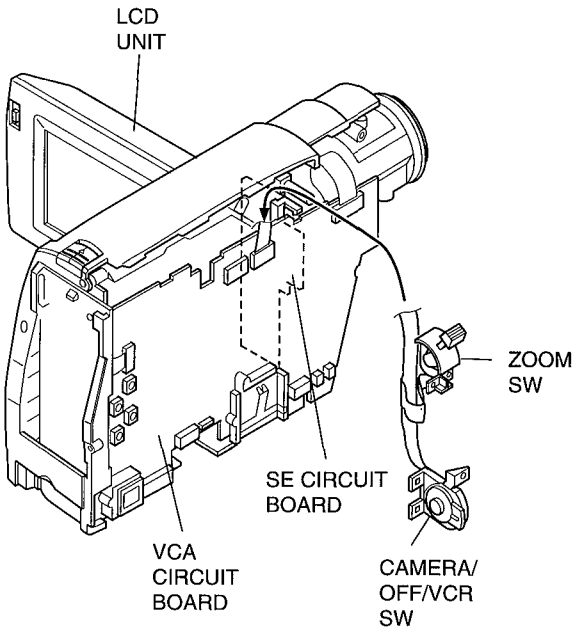


Fig. 3-1

3.2 TEST EQUIPMENT AND ALIGNMENT TAPES NECESSARY FOR ADJUSTMENT

Test Equipment

- Oscilloscope (dual trace)
- Vectorscope
- Digital Voltmeter (DVM)
- Frequency Counter
- Millivoltmeter
- Color Video Monitor
- Color Bar Generator

Alignment Tape, etc.

- Adjustment Floppy Disk
- Personal Computer
- Personal Computer 9-pin or 25-pin (RS232C) Cable
- DSP-R Jig
- DSP AV Output Jig
- Alignment Tape
- Blank Tape
- ATF-R Jig
- DC Power Supply (DC 0 - 7V/3A)
- DC Power Supply (DC 5V/1A)

3.3 ADJUSTMENT CONDITION

1) Check that the camera section has been adjusted correctly before adjusting the VCR section.
2) Connect this unit, a power supply and a color video monitor as shown in Fig. 1-1.
3) Use the 10:1 probe of the oscilloscope when other not specified.
4) When "Record mode" is specified, load a blank tape and set the 8mm video camera/recorder to the record mode by the following procedure.
   - Set the CAMERA/OFF/VCR switch to the CAMERA position.
   - Press the REC START/STOP button on the unit (or REC START/STOP button on the remote control).
5) Before adjusting the resistors marked with asterisks (*) in the following text, remove the corresponding laser trimming resistors to replace them with the specified semi-variable resistors.
6) Before unsoldering laser trimming resistors be sure to confirm each adjustment value.
   Remove only the resistors used in the adjustment items that should be adjusted.
7) Earth of test equipment: Pre-Amp Shield (GND).

Caution

1) The type 535, 635, 835 models will not perform the eject operation unless the LCD monitor is open.
   To set it to the eject state with the case dismantled, short PG905 pins 1 and 2 on the VCA board with a shorting clip, etc., and then press the EJECT button.
2) To supply video and audio signals to the all models, the AV input cable must be modified.

Procedure to modify the AV input cable

Although all models do not have AV input function, you can modify the AV input cable so that video and audio signals can be input.
For adjustment and performance check, modify the AV input cable by following the procedure below, to input signals.

Note 1: Do not modify the AV input cable for purposes other than adjustment or performance check.

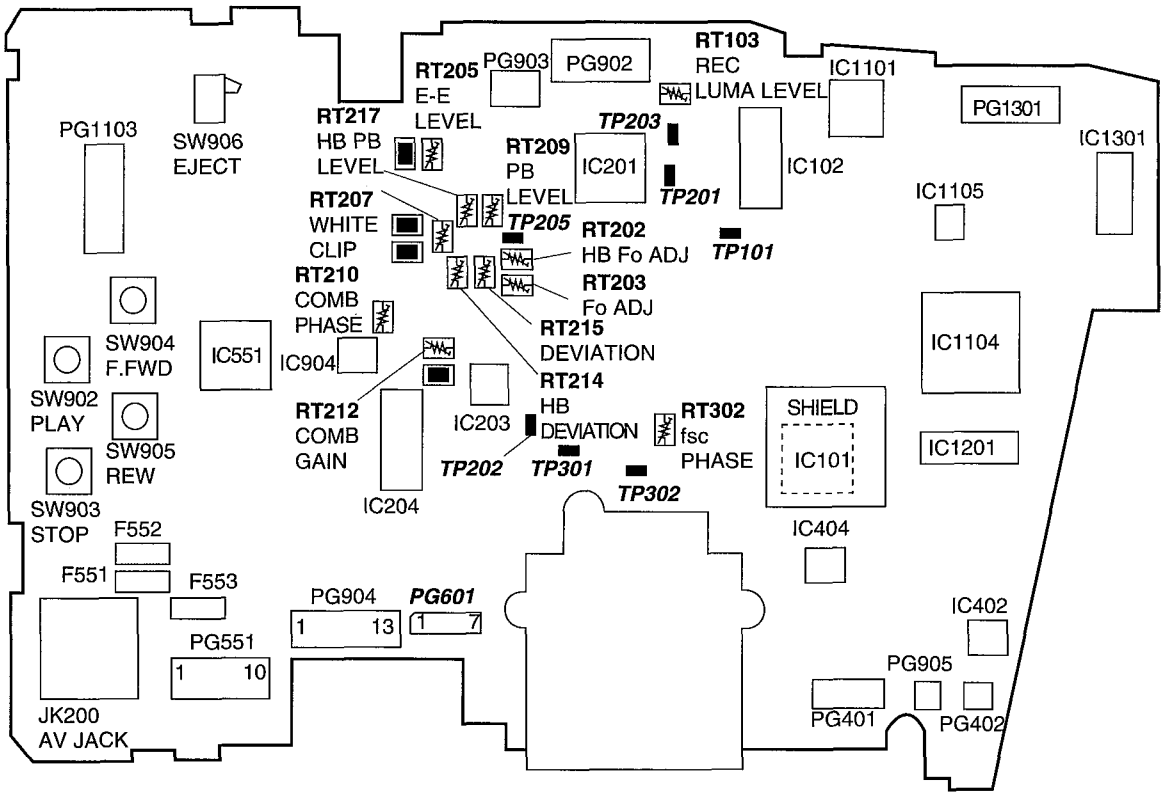
Note 2: Modify the AV input cable correctly.
If an improperly modified cable is connected to a camcorder, it will result in malfunctions.

Change the connection of pin 13 of the AV input cable from ground to pin 2 (DC5V).
(After checking that pin 13 and ground are not connected, connect of pin 13 to pin 2 (DC5V).)

3.4 PRESET POSITIONS OF SWITCHES AND CONTROLS DURING ADJUSTMENT

- CAMERA/OFF/VCR switch ..... "VCR" position
- TITLE ..... Not Display mode

3.5 ADJUSTMENT COMPONENTS LOCATIONS

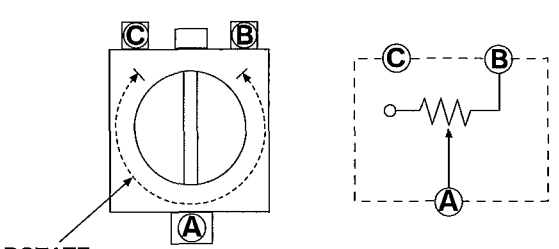


Note
- Variable resistors are laser trimming resistor.
- Test point (TP) are not actually provided on the circuit board.

Fig. 3-2 Main (VCA) Circuit Board [SIDE A]

Table.3-1 SEMI-VARIABLE RESISTORS TABLE

ADJUST POINT	SEMI-VARIABLE RESISTOR (Ω)	NAME OF ADJUSTMENT	ADJUST POINT	SEMI-VARIABLE RESISTOR (Ω)	NAME OF ADJUSTMENT
RT0103	470	REC LUMA LEVEL	RT0210	470	COMB PHASE
RT0202	22K	HB Fo ADJ [For Hi-8]	RT0212	2.2K	COMB GAIN
RT0203	22K	Fo ADJ	RT0214	10K	HB DEVIATION[For Hi-8]
RT0205	10K	E-E LEVEL	RT0215	10K	DEVIATION
RT0207	22K	WHITE CLIP	RT0217	22K	HB PB LEVEL [For Hi-8]
RT0209	22K	PB LEVEL	RT0302	2.2K	fsc PHASE

ADJUSTMENT RENGE	INSTALLATION METHOD
	Remove the laser trimming resistor and attach the specified semi-variable resistor.

3.6 CHECK AFTER REPLACING MAJOR COMPONENTS IN THE VCR SECTION

After replacing major components, perform checks, referring to the table below.
The following table shows the minimum adjustments required after major components are replaced.
The table below may not apply when several components are replaced, depending on the symptom of the defect.
Caution: After replacing the parts, check each adjustment. If you find the items necessary to be adjusted, remove the corresponding laser trimming resistors and replace them with variable resistors for adjustment.

ITEM No.	NAME OF ADJUSTMENT	NAME OF MAJOR COMPONENTS					
		VCA BOARD	CYLINDER	IC0901	IC0201	IC0202	IC0301
	SYSTEM CONTROL / SERVO CIRCUITS ADJUSTMENT						
(1)	Power Shut Off Level Adjustment	●		●			
(2)	Head Switching Point Adjustment	●	●	●			
	LUMINANCE / CHROMA CIRCUIT ADJUSTMENT						
(1)	Comb Filter Adjustment				●	●	
(2)	E-E Video Signal Level Adjustment				●		
(3)	White Clip Adjustment				●		
(4)	Carrier Frequency Adjustment				●		
(5)	Deviation Adjustment				●		
(6)	Record Luminance Level Adjustment				●		
(7)	Playback Luminance Level Adjustment				●		
(8)	Color Alignment Adjustment						●

3.7 SYSTEM CONTROL/SERVO CIRCUITS ADJUSTMENT

Before Starting Adjustment

- System control/servo circuits adjustment also needs a personal computer. Connect the camera/recorder, jigs, power supply, etc. in the same way as in camera section aadjustment.
- Be sure to perform this adjustment after replaceing or initializing the EEP ROM and VCA circuit board.
- When an error message appears during adjustment, refer to "4. Error Massage".
- If [ESC] (escape) is pressed, the computer's display returns Fig. 3-3 (MAIN MENU).
- To complete adjustment, pres to [ESC] (escape) key twice to restore the MS-DOS screen and then turn off the camera/recorder and jigs.

<PROCEDURE>

1) Start the MAP.
2) Press **D** key to select VCR ADJUSTMNT. (Figs. 3-3, 3-4)
3) Select the number of the required adjustment.

MAIN MENU

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
        Please select [A] - [G] or [ESC]
```

Fig. 3-3

Press **D**

VCR ADJ. MENU

```
**************************************************
        VCR ADJUSTMENT
**************************************************
    [1]     ADJUSTMENT OF ODC
    [2]     ADJUSTMENT OF SWITCHING POINT
    [ESC]   RETURN TO MAIN MENU
        Please select [1], [2] or [ESC]
```

Fig. 3-4

(1) Power Shut Off Level (ODC: Over Discharge) Adjustment

Purpose·	· To set the minimum voltage required to opreate the camera/recorder.		
Incompleted Phenomenon	· The usable time of the battery becomes short. · The camera/recorder doesn't operate normally.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· DVM	· PG0551-1 VCA · PG0551-8 (GND) VCA		
· DC Power Supply (0 - 7V) · 10P Ext. Cable (7069183)	· PG0551-1 VCA · PG0551-8 (GND) VCA	· Supply power (7.2V ± 0.5V) to PG0551.	
· Blank Tape		· Load the brank tape	

<PROCEDURE>

VCR ADJ. MENU

```
**************************************************
              VCR ADJUSTMENT
**************************************************
   [1]     ADJUSTMENT OF ODC
   [2]     ADJUSTMENT OF SWITCHING POINT
   [ESC]   RETURN TO MAIN MENU
          Please select [1], [2] or [ESC]
```

Note: 10 Pin Extention Cable (No.7069183)

- Pin 1 and 2: Positive (Red), Pin 6 and 7: Negative (Brown).
- If it is used for this adjustment, short pins 3 and 5 to pin 6 or pin 7 (GND).

Press **1** key to select the ADJUSTMENT OF ODC.

```
« SET UP OF ODC ADJUSTMENT STARTED »
PRESET POSITION OF 'CAMERA/OFF/VCR' SWITCH
'VCR' POSITION
SET POWER SOURCE AT 5.8 (+/- 0.05) V.
START ADJUSTING.
PRESS ANY KEY.
```

Set the voltage of PG0551-1 to 5.8V ± 0.05V.

Press any key, and the display changes as follows.

```
« SETUP OF ODC ADJUSTMENT COMPLETED »
« ODC ADJUSTMENT STARTED »
« ODC ADJUSTMENT COMPLETED »
PRESS ANY KEY.
```

Press any key to return to VCR ADJ. MENU

(2) Head Switching Point Adjustment

Note: Be sure to perform this adjustment after replacing the cylinder assembly and VCA circuit board.

Purpose	· To set the switching point of the video heads during playback.		
Incompleted Phenomenon	· Vertical jitter occurs. · Switching noise appears across the bottom of the monitor screen.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Alignment Tape		· Playback the alignment tape.	

<PROCEDURE>

VCR ADJ. MENU

```
**************************************************
                VCR ADJUSTMENT
**************************************************
  [1]    ADJUSTMENT OF ODC
  [2]    ADJUSTMENT OF SWITCHING POINT
  [ESC]  RETURN TO MAIN MENU
          Please select [1], [2] or [ESC]
```

Press **2** key to select the ADJUSTMENT OF SWITCING POINT

```
« ADJUSTMENT OF SWITCHING POINT »
PRESET POSITIONS OF 'CAMERA/OFF/VCR' SWITCH
'VCR' POSITION
PRESS ANY KEY
```

```
SET UP OF SW POINT ADJUSTMENT STARTED.
SET UP OF SW POINT ADJUSTMENT COMPLETED.
SW POINT ADJUSTMENT STARTED.
```

```
SW POINT ADJUSTMENT DATA CHEACKING.
FINISHED WRITING DATA.
ADJUSTMENT FINISHED.
PRESS ANY KEY.
```

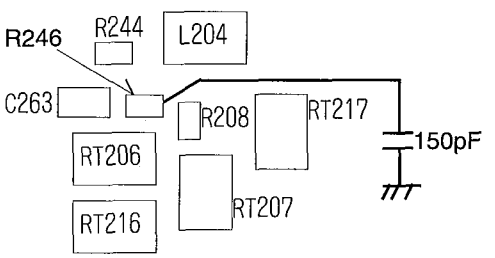
Turn the power off.

Press any key to return to VCR ADJ. MENU.

Caution

If adjustment cannot be done by the above procedure, connect a 150 pF capacitor between R246 and GND on the VCA board, and then perform the adjustment again.

After the adjustment is completed, disconnect the capacitor .



(VCA CIRCUIT BOARD -SIDE B-)

3.8 LUMINANCE/CHROMA CIRCUIT ADJUSTMENT

(1) Comb Filter Adjustment (Fig. 3-2)

Purpose	· To set the characteristic of the comb filter.		
Incompleted Phenomenon	· Jamming occurs at the edges. · The chroma S/N deteriorates.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Oscilloscope · Color Bar Generater · Blank Tape (Nor-8)	· TP0203 VCA · Video IN (AV IN)	· Input the color bar signal · STOP mode	*RT0212 VCA (COMB GAIN) *RT0210 VCA (COMB PHASE)

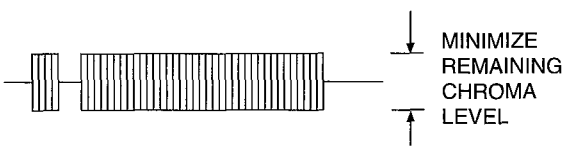
<PROCEDURE>

1) Load the blank tape for normal 8.
2) RT0212, RT0210:
   Set the chroma components to minimize the residual.

- Settings of oscilloscope -

· Trigger with video signal.

- Waveforms -



(50mV/50µsec.div.)

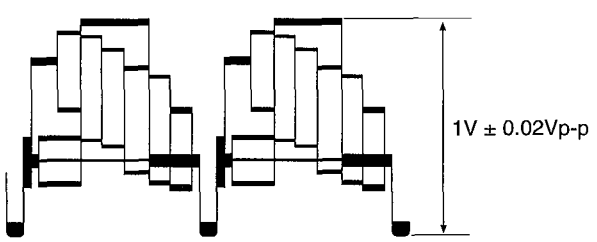
(2) E-E Video Siganl Level Adjustment (Fig. 3-2)

Purpose	· To set the video output level in the E-E mode.		
Incompleted Phenomenon	· The picture becomes dark or whitish in the E-E mode.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Oscilloscope · Color Bar Generater · Blank Tape (Nor-8)	· Video Out (AV OUT) · Video IN (AV IN)	· Input the color bar signal · STOP mode	*RT0205 VCA (E-E LEVEL)

<PROCEDURE>

1) Load the blank tape for normal 8.
2) RT0205:
   Set the video output level to 1V ± 0.02Vp-p.

- Waveforms -



(200mV/20µsec.div.)

(3) White Clip Adjustmen (Fig. 3-2)

Purpose	· To set thewhite clip level		
Incompleted Phenomenon	· No color apperrs in the highly bright subject.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Oscilloscope · Color Bar Generater · Blank Tape (Nor-8)	· TP0205 VCA · Video IN (AV IN)	· Input the color bar signal · STOP mode	*RT0207 VCA (WHITE CLIP)

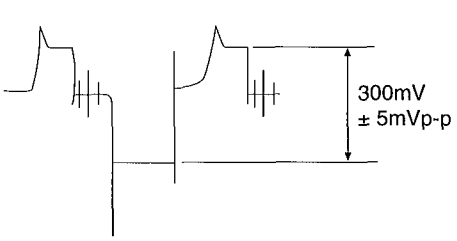
<PROCEDURE>

1) Load the blank tape for normal 8.
2) RT0207:
   Set the white clip level to 300mV ± 5mVp-p.

- Settings of oscilloscope -

· Trigger with video signal.

- Waveforms -



(100mV/100µsec.div.)

(4) Carrier Frequency Adjustment (Fig. 3-2)

Purpose	· To set the modulation frequency at the sync tip of the FM modulator to the specified value.		
Incompleted Phenomenon	· Black and white are inverted in the picture.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Oscilloscope · Color Bar Generater · Blank Tape (Nor-8, Hi-8)	· TP0101 VCA · Video IN (AV IN)	· Input the white (100%) signal · STOP mode	*RT0203 VCA (Fo ADJ) *RT0202 VCA (HB Fo ADJ)

<PROCEDURE>

1) Load the blank tape for normal 8.
2) RT0203:
   Set the period of the widest pulse is 238ns ± 3ns.

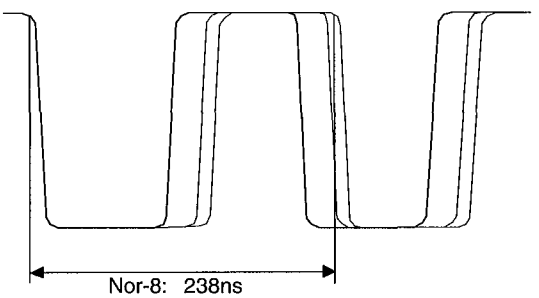
[For Hi-8 Model]

3) Load the blank tape for Hi-8.
4) RT0202:
   Set the period of the widest pulse is 175ns ± 3ns.

- Settings of oscilloscope -

· Trigger with video signal.

- Waveforms -



(500mV/50nsec.div.)

(5) Deviation Adjustment (Fig. 3-2)

Purpose	· To set the modulation frequency at the white peak of the FM modulator to the specified value.		
Incompleted Phenomenon	· The picture becomes dark or whitish during recording and playback.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Oscilloscope · Color Bar Generater · Blank Tape (Nor-8, Hi-8)	· TP0101 VCA · Video IN (AV IN)	· Input the white (100%) signal · STOP mode	*RT0215 VCA (DEVIATION) *RT0214 VCA (HB DEVIATION)

<PROCEDURE>

1) Load the blank tape for normal 8.
2) RT0215:
   Set the period of the narrowest pulse is 184ns ± 2ns.

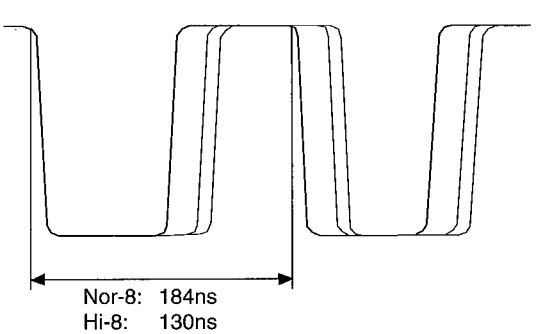
[For Hi-8 Model]

3) Load the blank tape for Hi-8.
4) RT0214:
   Set the period of the narrowest pulse is 130ns ± 2ns.

- Settings of oscilloscope -

· Trigger with video signal.

- Waveforms -



(500mV/50nsec.div.)

(6) Record Luminance Adjustment (Fig. 3-2)

Purpose	· To set the luminance signal to the specified value.		
Incompleted Phenomenon	· The luminance S/Ns diteriorate. · Cross-beats appear on the monitor screen.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Oscilloscope	· CH-1: Video Out (AV OUT) · CH-2: TP0101 VCA	· Input the white (100%) signal · STOP mode	*RT0103 VCA (REC LUMA LEVEL)
· Color Bar Generater	· Video IN (AV IN)		
· ATF-R Jig (SW3: ON)	· PG0601 VCA		
· Blank Tape (Nor-8, Hi-8)			

<PROCEDURE>

[For Normal 8 Model]

1) Load the blank tape for normal 8.

[For Hi-8 Model]

1) Load the blank tape for Hi-8.

2) Connect the ATF-R jig to PG0601 and turn the power off.
3) Set the camera/recorder to the test mode by the following procedure.

- Procedure to set to the test mode -

1. Remove the power supply from the camera/ recorder.
2. Set the CAMERA/OFF/VCR switch to CAMERA position.
3. Check that the ATF-R jig (SW1:OFF, SW3:ON) is connected and then press the playback button and hold it , then supply the power again to the camera/recorder.

4) Set the unit to the loading state.

[For Normal 8 Model]

5) RT0103:
Set the sync tip section in record luminance signal is 500mV ± 5mVp-p.

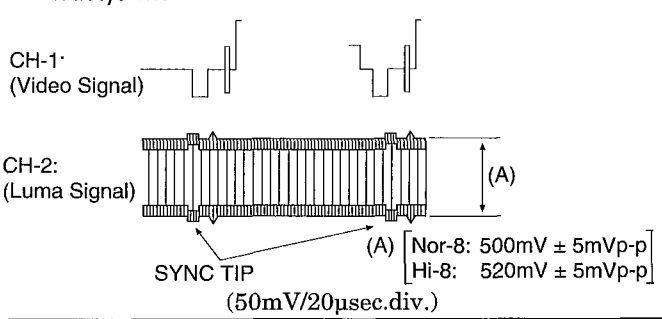
[For Hi- 8 Model]

5) RT0103:
Set the sync tip section in record luminance signal is 520mV ± 5mVp-p.

- Settings of oscilloscope -

· Trigger with video signal.

- Waveforms -



(7) Playback Luminance Adjustment (Fig. 3-2)

Note: Perform this adjustment after completing the record luminance level adjustment.

Purpose	· To set the luminance signal to the specified value.		
Incompleted Phenomenon	· The picture becomes dark or whitish during playback.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· Oscilloscope · Blank Tape (Nor-8, Hi-8) · Color Bar Generater	·Video Out (AV OUT)	· Record color bar siganl and play it back with same VCR	*RT0209 VCA (PB LEVEL) *RT0217 VCR (HB PB LEVEL)

<PROCEDURE>

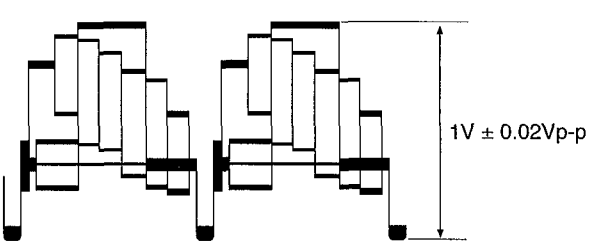
[For Normal 8 Model]

1) Playback the Nor-8 tape.
2) RT0209:
Set the playback luminance level to 1V ± 0.02Vp-p.

[For Hi-8 Model]

1) Playback the Hi-8 tape.
2) RT0217:
Set the playback luminance level to 1V ± 0.02Vp-p.

- Waveforms -



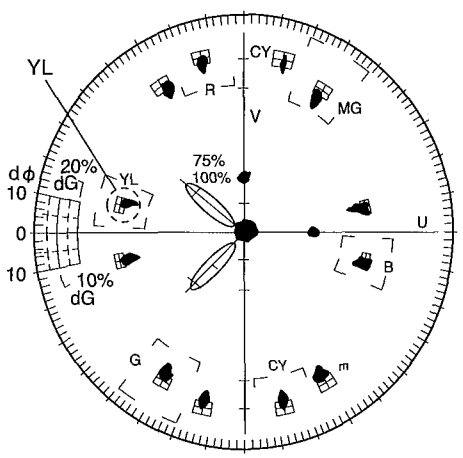
(8) Color Alignment Adjustment (Fig. 3-2)

Purpose	· To set the tint in the color alignment circuit.		
Incompleted Phenomenon	· No color appears during trick play or color reproduction becomes defective.		
Equipment/Jigs	**Test Points**	**Condition**	**Adjustment point**
· DC Power Supply (0-8V) · Vectorscope · ATF-R Jig · Alignment Tape	· TP0302 VCA · Video IN (AV IN) · PG0601 VCA	· Playback the alignment tape.	*RT0302 VCA (fsc PHASE)

<PROCEDURE>

1) Connect a vectorscope terminated with 75 ohms to the video output (AV OUT)
2) Connect the ATF-R jig to PG0601 and turn the power off.
3) Press the FF button and hold it, then set the POWER switch to the VCR position so the unit enters the test mode (used exclusively for color alignment adjustment).
4) Press the PLAY button and playback the alignment tape.
5) Supply power (5V DC) to TP0302 via a 1k Ω resistor.
6) Check the YL chroma phase.
7) Press the PLAY button.
8) RT0302: Set the VL chroma phase is aligned (± 10 deg.) before and after the PLAY button is pressed.

Note: When the PLAY button is pressed after the unit is set to the test mode, the unit enters the normal play mode. When the PLAY button is pressed again, the unit enters the color alignment adjustment mode.



4. ERROR MESSAGE

4.1 Camera Electric Volume and Digital Adjustments

ERROR MESSAGE	COUNTERMEASURE
ERROR OCCURRED. IRIS TROUBLE PRESS ANY KEY	· Check whether or not power is supplied. · Check the values of the iris drive circuit. · Defective soldering, damage to pattern, etc. in the above circuit. · Check the iris block and replace it if necessary.
ERROR OCCURRED ON dax ADJUSTMENT PRESS ANY KEY	· Check the values in the hall amp circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
D RANGE OVER. ERROR ON dax ADJUSTMENT PRESS ANY KEY.	· Check the values in the hall amp circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
ERROR OCCURRED ON da0 and da1 ADJUSTMENT PRESS ANY KEY	· Check the values in the hall amp circuit and its peripheral circuits. · Defective soldering, damage to pattern, etc. in the above circuits.
FILE NOT FOUND !!!! PRESS ANY KEY	· The adjustment program (file) cannot be found. · Check the adjustment floppy disk and replace it if necessary.
FILE OPEN ERROR !!!! PRESS ANY KEY	· The adjustment program (file) does not start. · Check the adjustment floppy disk and replace it if necessary.
ERROR OCCURRED ON C DUTY ADJUSTMENT PRESS ANY KEY	· Check the values of the iris drive circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
ERROR OCCURRED ON FDET ADJUSTMENT PRESS ANY KEY	· Supply power again and re-adjust. · Check the values in the hall amp circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
ERROR OCCURRED. ZOOM DOES NOT WORK PRESS ANY KEY	· Supply power again and re-adjust.
TOO BRIGHT PRESS ANY KEY	· The subject is too bright. · Move the camera farther away from the light box.
TOO DARK PRESS ANY KEY	· The subject is too dark. · Check the light box. · Move the camera closer to the light box.
D RANGE OVER ERROR ON HALL AMP IRIS CANNOT OPEN ANY MORE PRESS ANY KEY	· Supply power again and re-adjust. · The subject is too dark. · Check the light box. · Move the camera closer to the light box. · Check the values in the hall amp circuit. · Defective soldering, damage to pattern, etc. in the above circuit.
STAURATION ERROR. TOO BRIGHT PRESS ANY KEY	· The subject is too bright. · Move the camera farther away from the light box.
CAN'T ADJUST WHITE BALANCE PLEASE RETRY PRESS ANY KEY	· The subject is too bright or too dark. · Check the light box. · Move the camera closer to or farther away from the light box. · Supply power again and re-adjust.

4.2 Autofocus Adjustment

ERROR MESSAGE	COUNTERMEASURE
TIME OUT ERROR ON FOCUS	· Check the conditions of subject. · If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (1) of TROUBLESHOOTING OF AUTOFOCUS.
TIME OUT ERROR ON ZOOM	· If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (2) of TROUBLESHOOTING OF AUTOFOCUS.
TIME OUT ERROR ON AF STEP	· Check the conditions of subject. · If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (1) of TROUBLESHOOTING OF AUTOFOCUS.

ERROR MESSAGE	COUNTERMEASURE
AF LIMIT OVER	· Check the conditions of subject. · If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (2) of TROUBLESHOOTING OF AUTOFOCUS.
AF ERROR	· If this error message appears even when the adjustment is performed 2 or 3 times, the autofocus circuit system is defective. · Refer to (1) of TROUBLESHOOTING OF AUTOFOCUS.
TOO DARK	·Insufficient lighting. Check the subject.

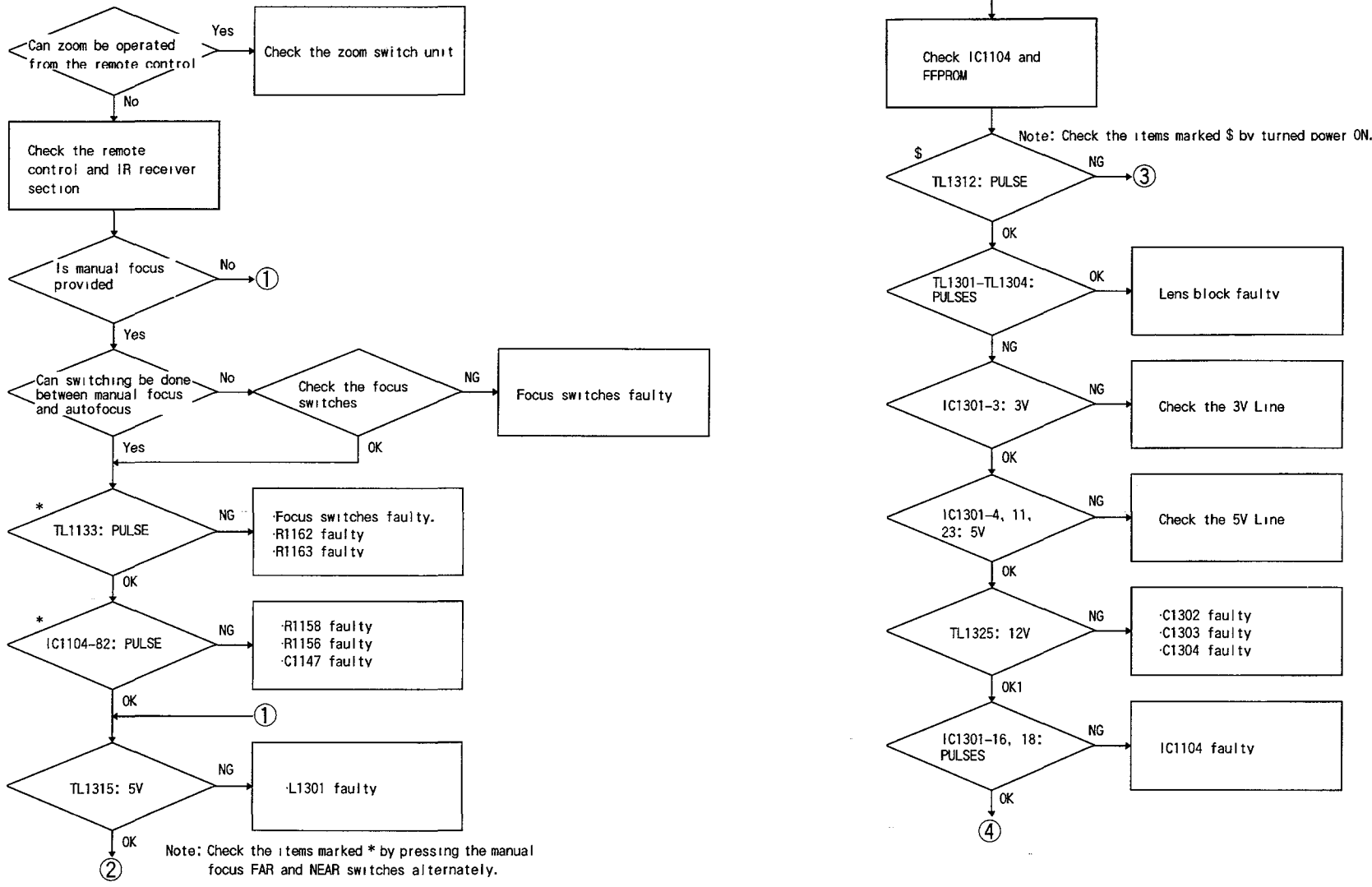
4.3 Spot Noise Adjustment

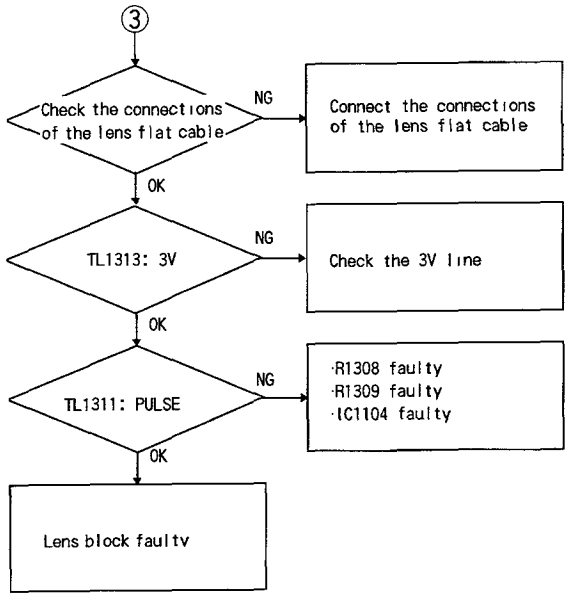
ERROR MESSAGE	COUNTERMEASURE
ERROR!! SPOT NOISE COMPENSATION IS STOPPED BY INITIAL DATA. PLEASE CHECK THE EEPROM. PRESS ANY KEY.	· Spot noise compensation is inhibited by the data in the EEPROM. · Turn the power on again. · Data in the EEPROM is defective. (Initialize it.) · Check the EEPROM, and if necessary,replace it.
ERROR!! THRESHOLD DATA ERROR. PLEASE CHECK THE EEPROM. PRESS ANY KEY.	· Turn the power on again. · Data in the EEPROM is defective. (Initialize it.) · Check the EEPROM, and if necessary, replace it.
ERROR!! THE SPOT NOISE IS TOO MANY. CAN'T COMPENSATE ANY MORE. PRESS ANY KEY.	· The amount of spot noise that can be compensated reaches the limit. · Turn the power on again. · Check the CCD image sensor, and if necessary, replace it.

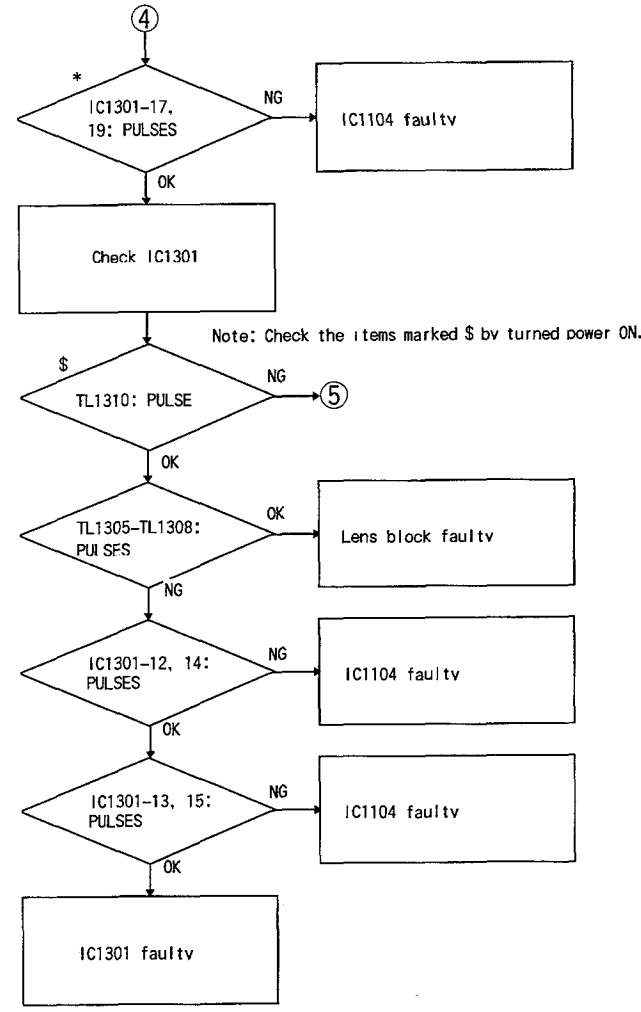
4.4 VCR Adjustment

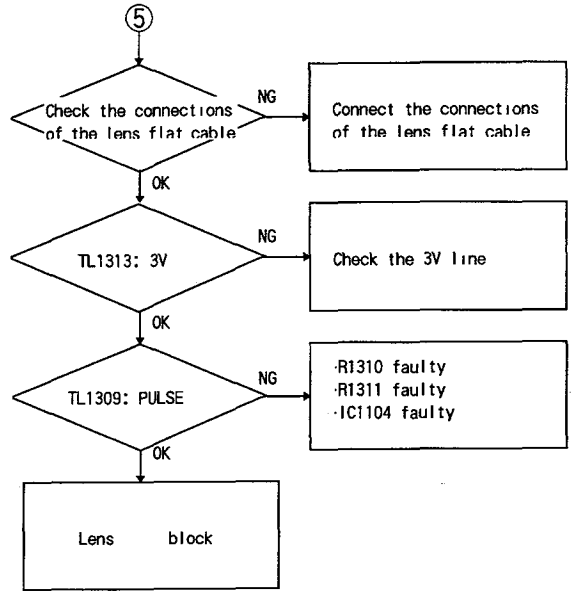
ERROR MESSAGE	COUNTERMEASURE
ERROR: SWP_TEST>DAT FILE NOT FOUND!	· The adjustment program cannot be found. · Check the adjustment floppy disk and replace it if necessary.
ERROR: INVALID MODEL PRESS ANY KEY	· A wrong model has been selected. · The adjustment program cannot be found. · Check the adjustment floppy disk and replace it if necessary.
THIS MODEL NEED NOT BE ADJUSTED PRESS ANY KEY	· A wrong model has been selected. · A product that needs analog adjustment is connected.
ADJUSTMENT INCOMPLETED PRESS ANY KEY	· The value set by adjustment defective. · Re-adjust. · Check cylinder. · Check the alignment tape. · Check whether or not the usual operation is done correctly.
RETRY ADJUSTING. PRESS ANY KEY	· Supply power again and re-adjust.
CAMERA IS NOT READY	· Check whether or not power is supplied.
ERROR OCCURRED CAN'T PLAY BACK PRESS ANY KEY	· No playback video. · Check the playback signal.
ERROR OCCURRED NO V.SYNC FOUND PRESS ANY KEY	· Vertical sync loss. · Check the vertical sync signal.
INVALID MODEL PRESS ANY KEY	· A wrong model has been selected. · The adjustment program cannot be found. · Check the adjustment floppy disk and replace it if necessary.
ERROR OCCURRED CAN'T RECORD PRESS ANY KEY	· No video recording. · Check the recording signal.

(1) NO ZOOM AND FOCUS OPERATION

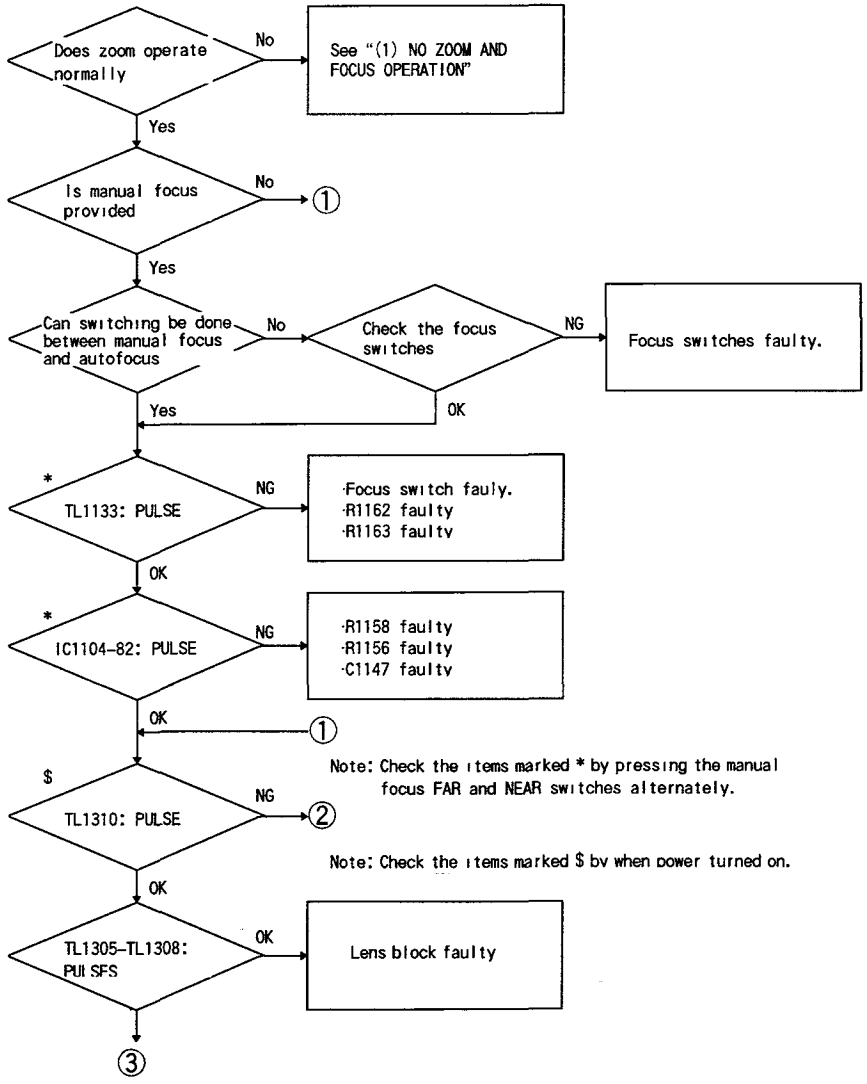


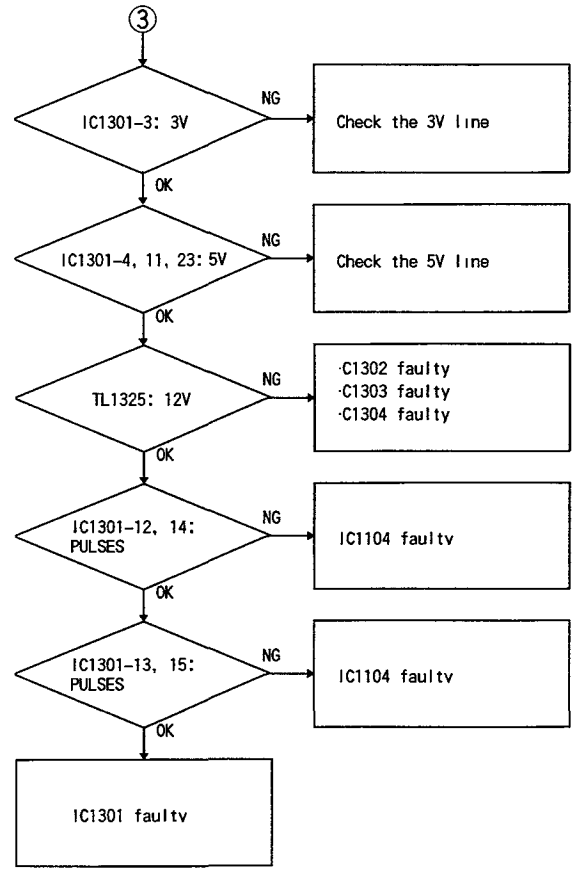

③
Check the connections of the lens flat cable
NG
Connect the connections of the lens flat cable
OK
TL1313: 3V
NG
Check the 3V line
OK
TL1311: PULSE
NG
·R1308 faulty
·R1309 faulty
·IC1104 faulty
OK
Lens block faultv

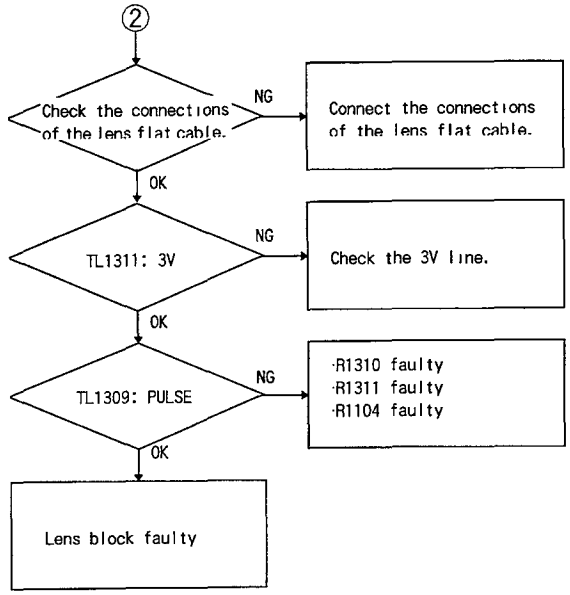

④
*
IC1301-17, 19: PULSES
NG
IC1104 faultv
OK
Check IC1301
Note: Check the items marked $ by turned power ON.
$
TL1310: PULSE
NG
⑤
OK
TL1305-TL1308: PULSES
OK
Lens block faultv
NG
IC1301-12, 14: PULSES
NG
IC1104 faultv
OK
IC1301-13, 15: PULSES
NG
IC1104 faultv
OK
IC1301 faultv


⑤
Check the connections of the lens flat cable
NG
Connect the connections of the lens flat cable
OK
TL1313: 3V
NG
Check the 3V line
OK
TL1309: PULSE
NG
·R1310 faulty
·R1311 faulty
·IC1104 faulty
OK
Lens block

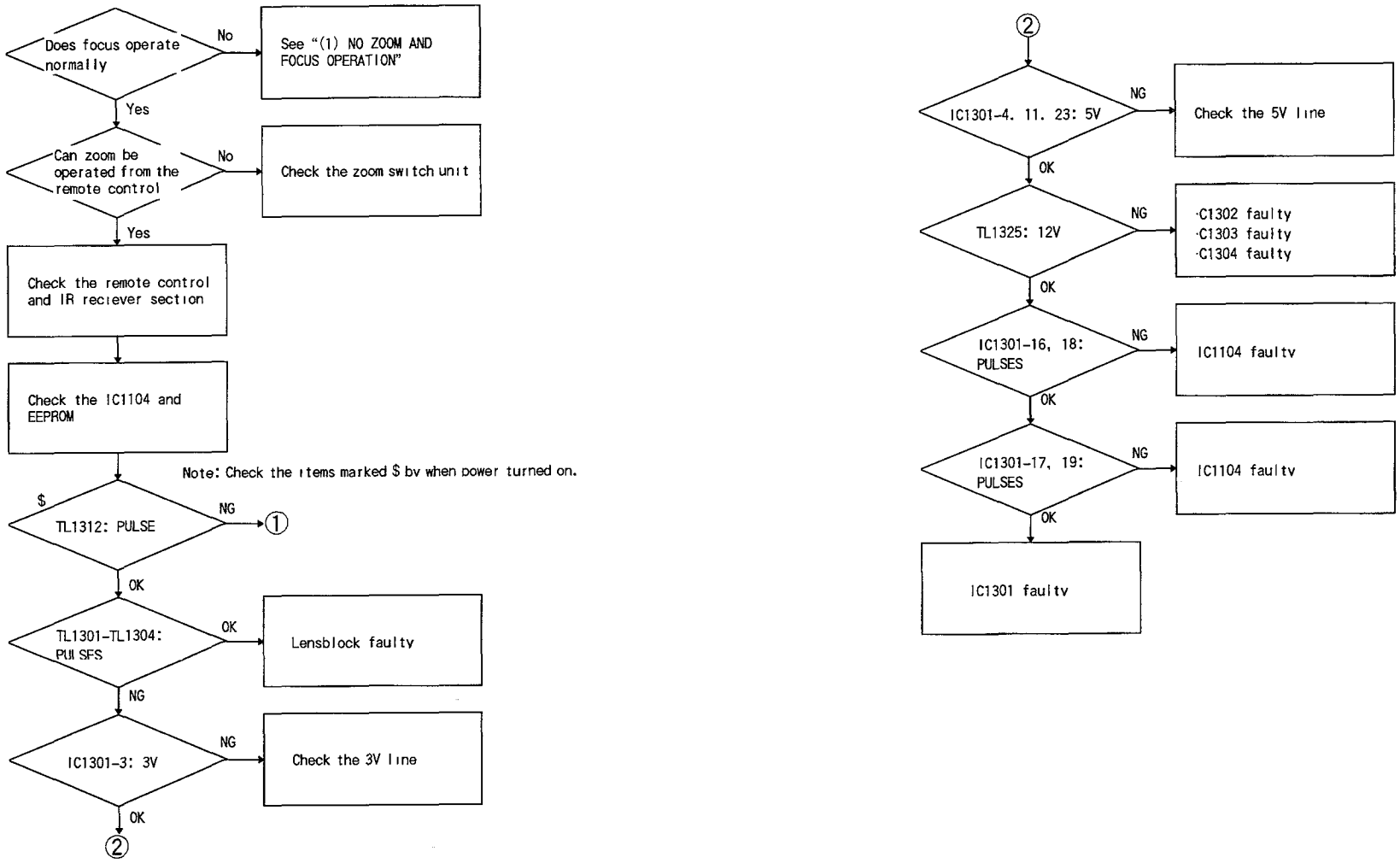
(2) NO FOCUS LENS OPERATION

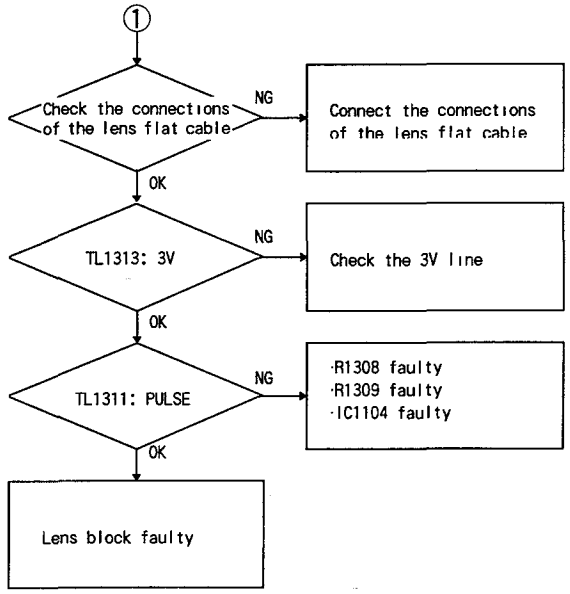




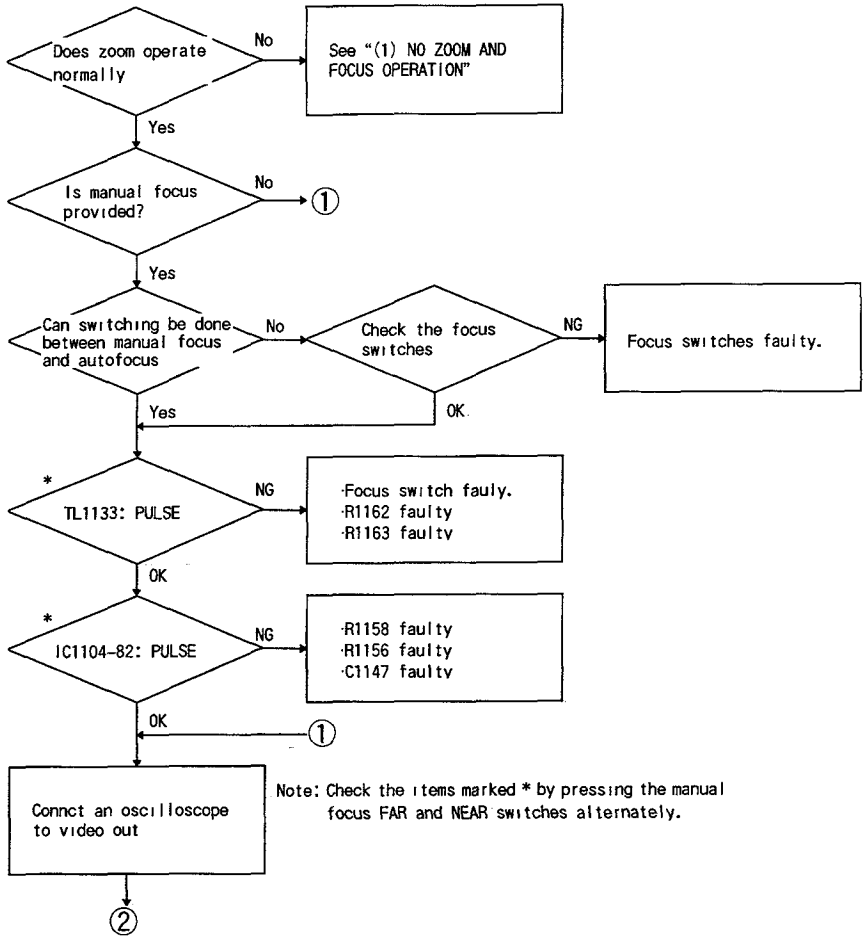

②
Check the connections of the lens flat cable.
NG
Connect the connections of the lens flat cable.
OK
TL1311: 3V
NG
Check the 3V line.
OK
TL1309: PULSE
NG
·R1310 faulty
·R1311 faulty
·R1104 faulty
OK
Lens block faulty

(3) NO ZOOM OPERATION

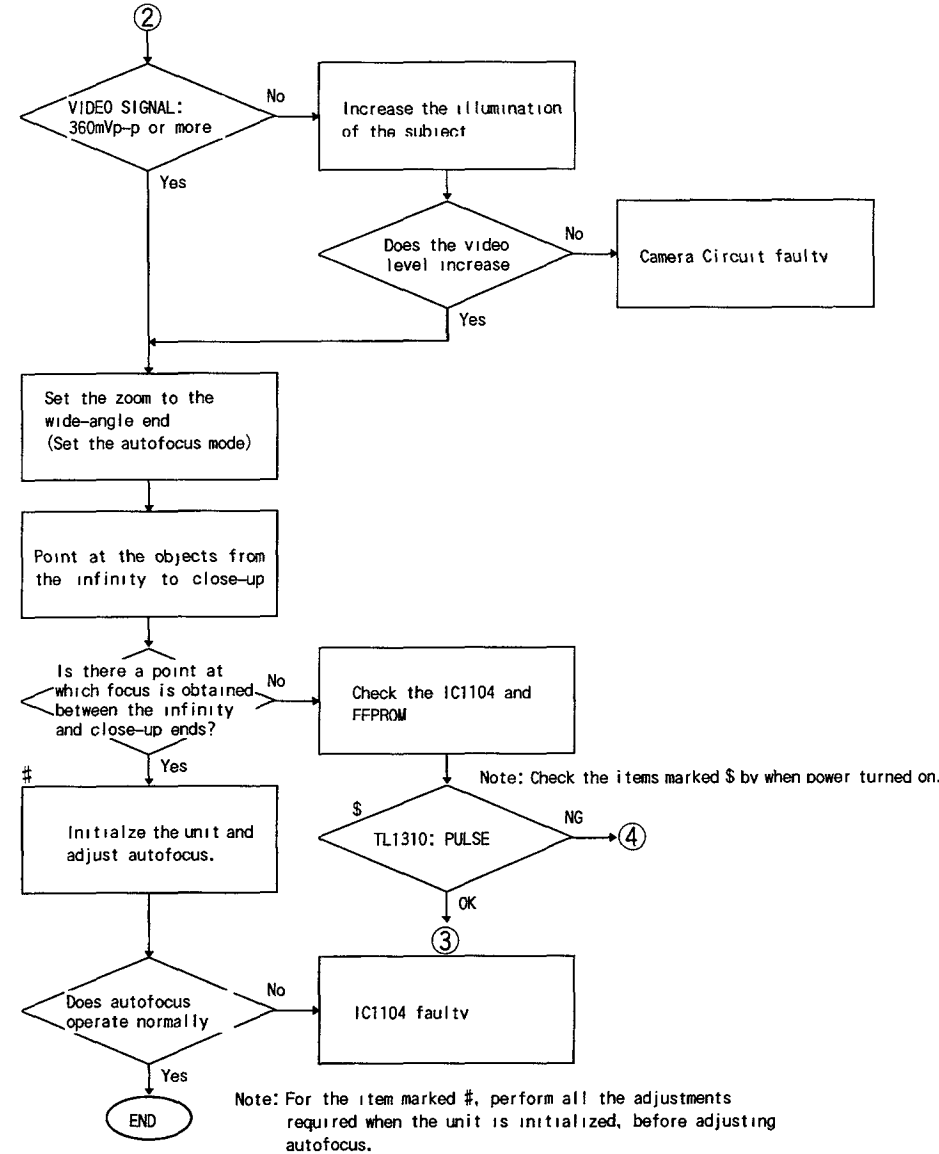



①
Check the connections of the lens flat cable
NG
Connect the connections of the lens flat cable
OK
TL1313: 3V
NG
Check the 3V line
OK
TL1311: PULSE
NG
·R1308 faulty
·R1309 faulty
·IC1104 faulty
OK
Lens block faulty

(4) NO AUTOFOCUS OPERATION

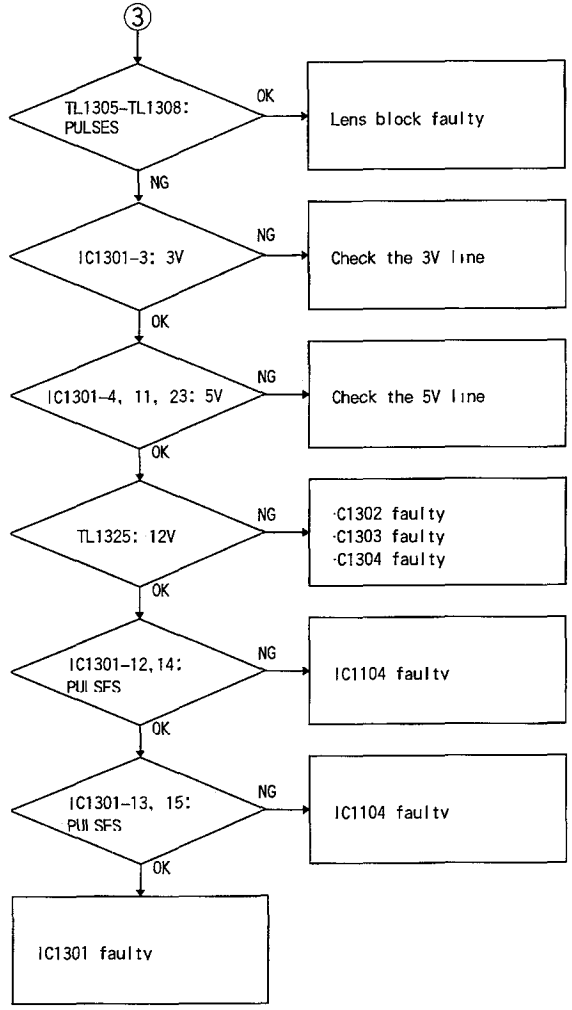


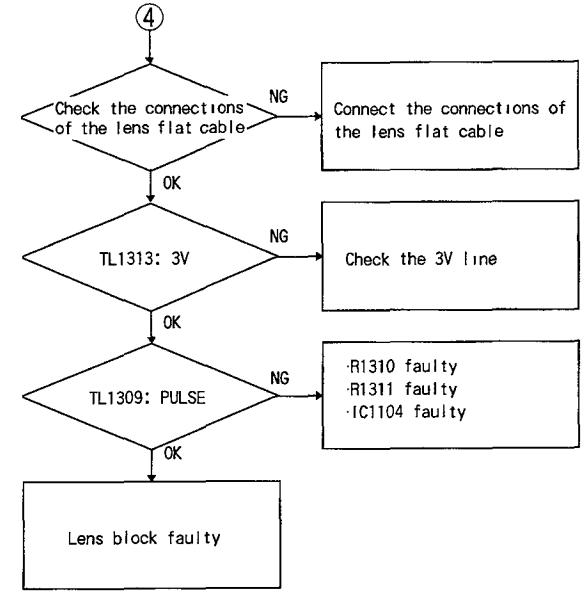
Note: Check the items marked * by pressing the manual focus FAR and NEAR switches alternately.



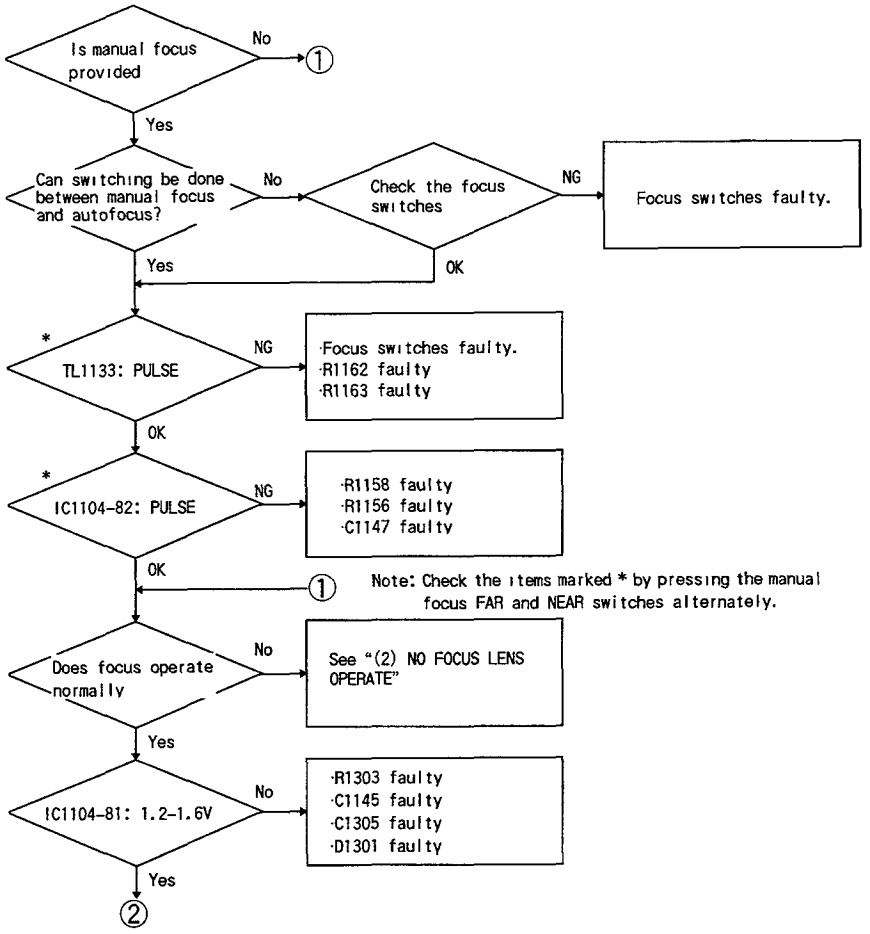
Note: Check the items marked $ by when power turned on.

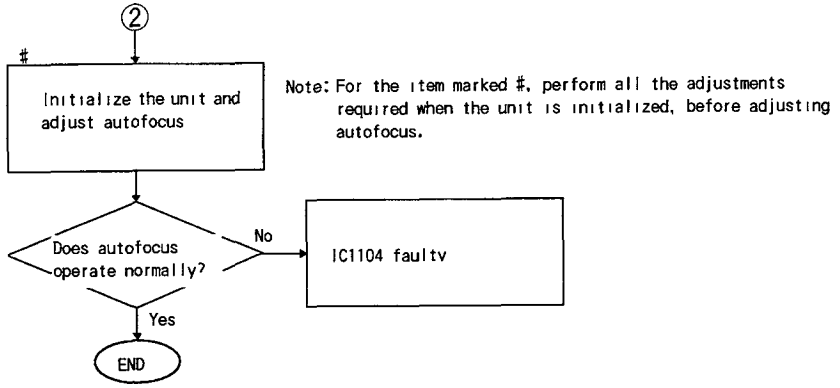
Note: For the item marked #, perform all the adjustments required when the unit is initialized, before adjusting autofocus.


③
TL1305-TL1308: PULSES
OK
Lens block faulty
NG
IC1301-3: 3V
NG
Check the 3V line
OK
IC1301-4, 11, 23: 5V
NG
Check the 5V line
OK
TL1325: 12V
NG
·C1302 faulty
·C1303 faulty
·C1304 faulty
OK
IC1301-12,14: PULSES
NG
IC1104 faulty
OK
IC1301-13, 15: PULSES
NG
IC1104 faulty
OK
IC1301 faulty


④
Check the connections of the lens flat cable
NG
Connect the connections of the lens flat cable
OK
TL1313: 3V
NG
Check the 3V line
OK
TL1309: PULSE
NG
·R1310 faulty
·R1311 faulty
·IC1104 faulty
OK
Lens block faulty

(5) SUBJECT IS GREATLY OUT-OF-FOCUS WHEN ZOOMED





Vorsicht

Lithium-Batterie: Explosionsgefahr bei falschem Austausch der Batterie. Nur gegen den vom Gerätehersteller empfohlenen Typ (oder gleichwertig) austauschen. Verbrauchte Batterien gemäß Anweisungen des Herstellers vermüllen.
Wenn die Lithium-Batterie ausgetauscht wird, unbedingt den gleichen Typ verwenden und diesen richtig anschließen.
Wartung:
- Lithium-Batterien enthalten gefährliche Chemikalien.
- Mit Vorsicht handhaben und vermüllen.
- Niemals in ein Feuer werfen.
- Niemals kurzschließen.
- Zum Vermüllen in einen Plastikbeutel einlegen und an einer Sammelstelle oder am Sondermüllplatz abgeben.

Vorsicht (Flüssigkristallanzeige)

Die LCD-Tafel (Flüssigkristallanzeige) wurde unter Verwendung von fortschrittlichster Präzisionstechnologie hergestellt. Mehr als 99,99% der Bildelemente (Pixel) sind wirksam, wobei jedoch manche (weniger als 0,01%) als farbige helle Punkte erscheinen können. Dies weist auf keinen Fehler hin, da die LCD-Tafel bis an die Grenzen der derzeitigen Technologie geht.

Vorsicht (CRT EVF)

Vorsicht ist an dem weiß bemalten Abschnitt der Leiterplatte des elektronischen Suchers geboten, da dieser eine Hochspannung erzeugt.

Röntgenstrahlung

Viele elektrische und mechanische Teile weisen spezielle Sicherheitsfunktionen auf. Diese sind anhand einer Sichtprüfung oft nicht feststellbar, und diese Schutzwirkungen können auch nicht gewährleistet werden, wenn Ersatzteile mit höherer Spannung, Wattzahl usw. verwendet werden. Die Ersatzteile, die solche spezielle Sicherheitsfunktionen aufweisen, sind in dieser Wartungsanleitung besonders gekennzeichnet. Elektrische Komponenten mit solchen Merkmalen sind in den Schaltplänen und der Stückliste in dieser Wartungsanleitung mit dem Symbol ⚠ gekennzeichnet. Die Verwendung eines Ersatzteiles, das nicht die gleichen Schutzwirkungen wie ein von HITACHI empfohlenes, in der Stückliste dieser Wartungsanleitung aufgeführtes Ersatzteil aufweist, kann zu Stromschlag, Feuer und anderen Gefahren führen. Die Sicherheit unserer Produkte wird ständig verbessert, und neue Instruktionen werden von Zeit zu Zeit veröffentlicht. Für die neuesten Informationen sollten Sie immer die geltende HITACHI Wartungsanleitung zu Rate ziehen. Ein Abonnement bzw. zusätzliche Kopien der HITACHI Wartungsanleitung sind gegen eine Nominalgebühr von der HITACHI SALES CORPORATION erhältlich.

Hinweis zur Sicherheit des Produktes

Die Primärquelle für die Röntgenstrahlung in diesem Sucher ist die Bildröhre. Die in diesem Sucher verwendete Bildröhre weist eine spezielle Konstruktion auf, um die Röntgenstrahlung zu begrenzen. Für kontinuierlichen Schutz gegen Rötgenstrahlung muß die Ersatzröhre vom gleichen Typ wie die ursprünglich von Hitachi genehmigte Röhre sein.

Wie die "TYP"-Identifikationen in der Wartungsanleitung unterschieden werden

Die Teile und Schaltkreise sind in dieser Anleitung durch den "TYP" identifiziert, um die Unterschiede zwischen den Modellen unterscheiden zu können. Die TYP-Nummern sind gleich wie die Modell-Nummern. Die folgende Tabelle zeigt, wie die TYP-Identifikationen zu lesen sind.

TYP-Identifikation		Modellbezeichnung
TYP 330	—>	VM-E330E
TYP 630	—>	VM-H630E
TYP 535	—>	VM-E535LE
TYP 635	—>	VM-E635LE
TYP 835	—>	VM-H835LE

INHALT

KAPITEL 1 ALLGEMEINE INFORMATIONEN

Technische Daten G1-1
Vergleich mit früherem Modell G1-2
Vergleich der Hauptsteuerungs-IC G1-4
Vorrichtungen und Bänder für die Einstellung G1-5
Verwendung der neuen Verlägerungskabel G1-6
Wartungsanleitung-Abkürzungsliste G1-7
Identifikation der leiterfreien (Chip) Komponenten G1-9
Wartungs/Inspektionsvorgang G1-12
Auszüge aus der Bedienungsanleitung G1-14

KAPITEL 2 DEMONTAGE

1. Manuelle Einstellung des Auswurfstatus G2-1
2. Vor Beginn der Demontage G2-2
3. Ausbau von Gehäusen, Leiterplatte und Laufwerkblock G2-3

KAPITEL 3 ELEKTRISCHE EINSTELLUNG

1. Anschluß für die Einstellung G3-1
2. Einstellung des Kameraabschnitts G3-2
3. Einstellung des Videorecorder-Abschnitts G3-18
4. Fehlermeldungen G3-27
5. Störungsbeseitigung G3-30

CHAPTER 4 EXPLODED VEWS

1. CABINET SECTION [TYPE 330, 630] 4-1
2. CABINET SECTION [TYPE 535, 635, 835] 4-2
3. CHASSIS SECTION 4-3
4. CAMERA BLOCK SECTION 4-4
5. ELECTRONIC VIEWFINDER (EVF) SECTION 4-5
6. LCD DISPLAY SECTION 4-5
7. ACCESSORIES 4-6

CHAPTER 5 REPLACEMENT PARTS LIST

1. MECHANICAL PARTS LIST 5-1
2. ELECTRICAL PARTS LIST 5-2

CHAPTER 6 SCHEMATIC AND CIRCUIT BOARD DIAGRAMS

INTERNAL WIRING DIAGRAM 6-1

	SCHEMATIC/CIRCUIT BOARD
SENSOR/GYRO [SE]	6-2 / 6-44
CAMERA PROCESS [VCA]	6-4 /6-34, 38
TROUBLE SENSOR [HTS9551C]	6-7 / 6-44
SYSTEM CONTROL [VCA]	6-8 /6-34, 38
SERVO [VCA]	6-10 /6-34, 38
AUDIO -MONAURAL- [VCA] (TYPE 330, 535, 635)	6-12 / 6-34
AUDIO -STEREO- [VCA] (TYPE 630, 835)	6-14 / 6-38
DC-DC CONVERTER [VCA]	6-16 /6-34, 38
Y/CHROMA [VCA] (TYPE 330, 535, 635)	6-18 / 6-34
Y/CHROMA [VCA] (TYPE 630, 835)	6-21 / 6-38
REAR UNIT	6-25 / -----
LCD DRIVE [LCD] (TYPE535, 635, 835)	6-26 / 6-42
ELECTRONIC VIEWFINDER [EMQ]	6-29 / 6-44

IC BLOCK DIAGRAM 6-30

IDENTIFICATION OF PARTS LOCATION 6-46

WAVEFORMS
- CAMERA 6-6
- SYS. CON 6-7
- SERVO 6-11
- VIDEO 6-24
- LCD 6-28
- EMQ 6-29

BLOCK DIAGRAMS
1. OVERALL 6-54
2. CAMERA 6-56
3. SYSTEM CONTROL 6-58
4. SERVO 6-60
5. AUDIO 6-62
6. VIDEO 6-64
7. POWER 6-66

MICROPROCESSOR PIN FUNCTION TABLE
1. DIGITAL MICROPROCESSOR (IC1104: D-µP) 6-68
2. SYSTEM CONTROL MICROPROCESSOR (IC901: S-µP) 6-70

KAPITEL 7 ANHANG

Selbstdiagnosefunktionen G7-1
Demonstrations-Modus (Demo) G7-6
TH-Bandlaufwerk G7-8

Hier sind nur die Unterschiede gegenüber der früher veröffentlichten Anleitung für das "TH-Bandlaufwerk" (Nr. 6406G) beschrieben.

CHAPTER 8 VM-ACE3E (AC ADPTER/CHARGER)

EXPLODED VIEW & REPLACEMENT PARTS LIST 8-1

Technische Daten

■ Allgemeines

Stromversorgung	7,2V Gleichstrom
Leistungsaufnahme	VM-H835LE: 4,5 Watt (bei Aufnahme mit ausgeschaltetem LCD-Monitor) 5,6 Watt (bei Aufnahme mit eingeschaltetem LCD-Monitor) VM-E635LE/E535LE: 4,3 Watt (bei Aufnahme mit ausgeschaltetem LCD-Monitor) 5,4 Watt (bei Aufnahme mit eingeschaltetem LCD-Monitor) VM-H630E: 4,6 Watt (bei Aufnahme) VH-E330E: 4,3 Watt (bei Aufnahme)
Abmessungen (B x H x L)	VM-H835LE/E635LE/E535LE: 104 x 115 x 239 mm VM-H630E/E330E: 91 x 115 x 239 mm
Gewicht	VM-H835LE/E635LE/E535LE: ca. 920g (ohne Akku und Cassette) VM-H630E/E330E: ca. 760 g (ohne Akku und Cassette)
Zulässiger Temperaturbereich bei Betrieb	0°C bis +40°C
Zulässige Luftfeuchtigkeit bei Betrieb	< 80%
Zulässiger Temperaturbereich bei der Aufbewahrung	–20° bis +60°C

■ Video-Aufnahmesystem

Format	8 mm
Aufnahme-/Wiedergabesystem	Zwei Video-Aufnahme-/Wiedergabeköpfe
Videosignal	PAL-Farb- und CCIR-Schwarzweißsignale, 625 Zeilen
Bandgeschwindigkeit	SP: 20,05 mm/sek.
Video-Ausgangspegel	1 Vs-s, 75 Ohm
Audio-Ausgangspegel	– 8 dB, < 1 kOhm
Schnellvorlauf-/Rücklaufdauer	Weniger als 8 Minuten mit Cassette P5-90

■ Kamera

Abtastung	625 Zeilen/50 Halbbilder/25 Vollbilder
Mindestbeleuchtung	VM-H835LE/H630E: 2 Lux VM-E635LE: 1 Lux VM-E535LE/E330E: 0,8 Lux
Aufnahmeelement	1/4-Zoll CCD-Bildelement
Objektivdurchmesser	46 mm

Vergleich mit früherem Modell

<—— : Gleich wie links

	Benennung	VM-H835LE/E635LE/E535LE	VM-H630E/E330E
Allgemeines	Stromversorgung	7,2 V Gleichstrom	<——
	Leistungsaufnahme	VM-H835LE: 5,6 W VM-E635LE/E535LE: 5,4 W (bei Aufnahme mit eingeschaltem LCD-Monitor)	VM-H630E: 4,6 W VM-E330E: 4,3 W (bei Aufnahme)
	Abmessungen (B x H x T mm)	104 x 115 x 239	91 x 115 x 239
	Gewicht	Ca. 920 g	Ca. 760 g
	Betriebstemperatur/-feuchtigkeit	0°C bis 40°C/< 80%	<——
	Lagertemperatur	–20°C bis 60°C	<——
	Format	VM-H835LE: 8 mm [Hi-8] VM-E635LE/E535LE: 8 mm	VM-H630E: 8 mm [Hi-8] VM-E330E: 8 mm
Videorecorder	Aufnahme/Wiedergabesystem	Zwei Videoköpfe + Gesamtlöschkopf	<——
	Bandgeschwindigkeit	SP: 20,05 mm/sek.	<——
	Schnellvorlauf/Rücklaufzeit	Weniger als 8 Minuten mit P5-90 Cassette	<——
	Kopftrommel	40 mm	<——
	Grundlegender Chassis-Typ	TH-Bandlaufwerk	<——
Kamera	Erforderliche Mindestbeleuchtung	VM-H835LE: 2 Lux VM-E635LE: 1 Lux VM-E535LE: 0,8 Lux	VM-H630E: 2 Lux VM-E330E: 0,8 Lux
	Aufnahmeelement	1/4" CCD Bildsensor	<——
	Objektivdurchmesser	46 mm	<——
	Zoom-Verhältnis/Blende	16:1 (4 - 64 mm)/f 1,6	<——
	Zoom-Geschwindigkeit	1 Geschwindigkeit	<——
Merkmale	Elektronischer Sucher	Kathodenstralhöre (Schwarzweiß)	<——
	Elektronische Bildstabilisierung	VM-H835LE/E635LE: Ja VM-E535LE: Nein	VM-H630E: Ja VM-E330E: Nein
	Digital-Zoom	Max.: x 130	<——
	Instant-Zoom	Ja (x 1,5)	<——
	Autofokussystem	Video-Autofokus	<——
	Programm AE (Verschlußzeit)	Ja (nur Programm AE)	<——
	Titelgenerator	Ja (2 Zeilen)	<——
	S-Steckverbinder Ausgang	VM-H835LE: Ja VM-E635LE/E535LE: Nein	VM-H630E: Ja VM-E330E: Nein
	Filmleuchten-Aufsteckschuh	Nein	<——
	Mikrofon	VM-H835LE: Stereo VM-E635LE/E535LE: Mono	VM-H630E: Stereo VM-E330E: Mono
	Ein/Ausblenden	Ja (Weiß/Wipe/Zoom/Schwarzweiß)	<——
	Datumssuche	Ja	<——
	16 x 9 Modus	Ja	<——
	Automatische Störschallunterdrückung	VM-H835LE: Ja VM-E635LE/E535LE: Nein	VM-H630E: Ja VM-E330E: Nein
	Automatischer/Manueller Fokus	Wählbar	<——
	Optische AV-Verbindung	Nein	<——
	LCD-Monitor	Ja (3-Zoll)	Nein
Zubehör	Netz-/Ladegerät	VM-ACE3E	<——
	Optische AV-Empfänger	Nein	<——
	Akku	VM-BPL13	<——
	Fernbedienung	VM-RME31E	<——

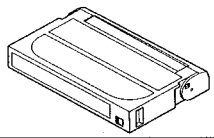
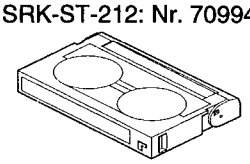
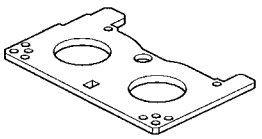
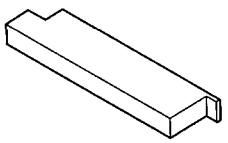
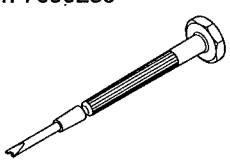
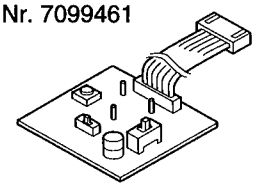
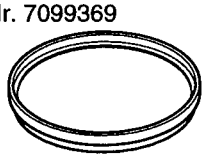
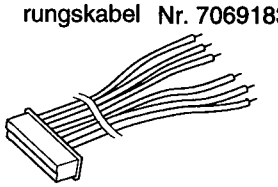
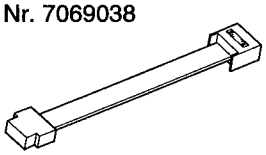
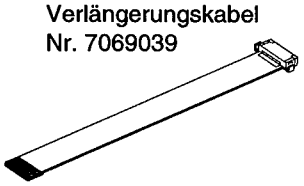
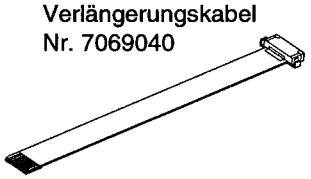
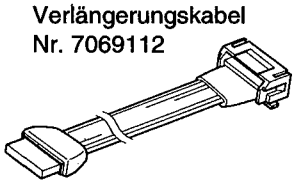
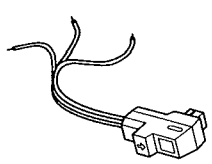
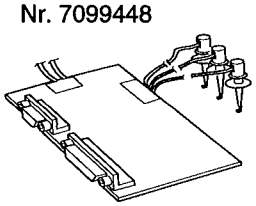
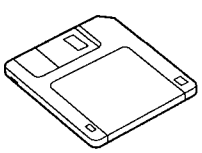
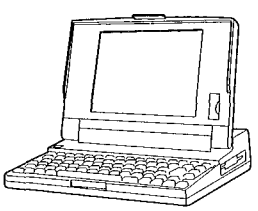
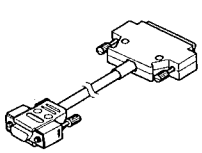
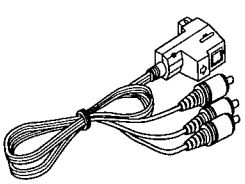
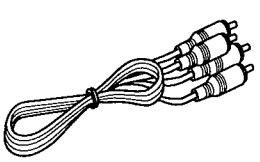
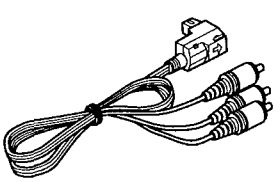
<—— : Gleich wie links

VM-H825LE/E325LE	VM-H620E/E220E	Benennung	
6,0 V Gleichstrom	<——	Stromversorgung	*Allgemeines*
VM-H825LE: 7,9 W VM-E325LE: 7,3 W (bei Aufnahme mit eingeschaltem LCD-Monitor)	VM-H620E: 5,4 W VM-E220E: 4,9 W (bei Aufnahme)	Leistungsaufnahme	
118 x 120 x 211	94 x 120 x 211	Abmessungen (B x H x T mm)	
Ca. 1050 g	VM-H620E: Ca. 870 g VM-E220E: Ca. 850 g	Gewicht	
0°C bis 40°C/< 80%	<——	Betriebstemperatur/-feuchtigkeit	
–20°C bis 60°C	<——	Lagertemperatur	
VM-H825LE: 8 mm [Hi-8] VM-E325LE: 8 mm	VM-H620E: 8 mm [Hi-8] VM-E220E: 8 mm	Format	
Zwei Videoköpfe + Gesamtlöschkopf	<——	Aufnahme/Wiedergabesystem	*Videorecorder*
SP: 20,05 mm/sek.	<——	Bandgeschwindigkeit	
Weniger als 8 Minuten mit P5-90 Cassette	<——	Schnellvorlauf/Rücklaufzeit	
40 mm	<——	Kopftrommel	
TH-Bandlaufwerk	<——	Grundlegender Chassis-Typ	
VM-H825LE: 4 Lux VM-E325LE: 1 Lux	VM-H620E: 3 Lux VM-E220E: 2 Lux	Erforderliche Mindestbeleuchtung	*Kamera*
1/4" CCD Bildsensor	<——	Aufnahmeelement	
46 mm	<——	Objektivdurchmesser	
12:1 (4 - 48 mm)/f 1,6	<——	Zoom-Verhältnis/Blende	
1 Geschwindigkeit	<——	Zoom-Geschwindigkeit	
Kathodenstralhöre (Schwarzweiß)	<——	Elektronischer Sucher	*Merkmale*
VM-H825LE: Ja VM-E325LE: Nein	VM-H620E: Ja VM-E220E: Nein	Elektronische Bildstabilisierung	
VM-H825LE: Max.: x 150 VM-E325LE: Max.: x 36	Max.: x 36	Digital-Zoom	
Ja (x 1,5)	<——	Instant-Zoom	
Video-Autofokus	<——	Autofokussystem	
Ja (nur Programm AE)	<——	Programm AE (Verschlußzeit)	
Ja (2 Zeilen)	<——	Titelgenerator	
VM-H825LE: Ja VM-E325LE: Nein	VM-H620E: Ja VM-E220E: Nein	S-Steckverbinder Ausgang	
Ja	<——	Filmleuchten-Aufsteckschuh	
VM-H825LE: Stereo VM-E325LE: Mono	VM-H620E: Stereo VM-E220E: Mono	Mikrofon	
Ja (Weiß/Wipe/Zoom)	<——	Ein/Ausblenden	
Ja	<——	Datumssuche	
Ja	VM-H620E: Ja VM-E220E: Nein	16 x 9 Modus	
VM-H825LE: Ja VM-E325LE: Nein	VM-H620E: Ja VM-E220E: Nein	Automatische Störschallunterdrückung	
Wählbar	<——	Automatischer/Manueller Fokus	
VM-H825LE: Ja VM-E325LE: Nein	VM-H620E: Ja VM-E220E: Nein	Optische AV-Verbindung	
Ja (3-Zoll)	Nein	LCD-Monitor	
VM-AC85E	<——	Netz-/Ladegerät	*Zubehör*
VM-H825LE: VM-IR20E VM-E325LE: Nein	VM-H620E: VM-IR20E VM-E220E: Nein	Optische AV-Empfänger	
VM-BP82G	<——	Akku	
VM-RME55E	<——	Fernbedienung	

Vergleich der Hauptsteuerungs-µP

BENENNUNG	*VM-H835LE/E635LE/E535LE VM-H630E/E330E*		*VM-H825LE/E325LE VM-H620E/E220E*	
	SENSOR/GYRO			
CCD-BILDSENSOR	Hi-8: ICX211 8 mm: ICX207/ICX210	(IC1001) (IC1001)	Hi-8: ICX069AK 8 mm: ICX087AK	(IC1001) (IC1001)
GYRO (VERT.)	CG-16DF0	(IC1401)		
GYRO (HORIZ.)	CG-16DF1	(IC1402)		
GYRO-VERSTÄRKER	NJM062M-TE1	(IC1403)	NJU7032M	(IC1403)
GYRO-RÜCKST.	TC4W66F	(IC1404)		
	SENSOR-TREIBER			
CDS/AGC	HD49322F	(IC1101)	HA118184F	(IC1101)
A/D-UMFORMER			HD49319A	(IC1102)
DIGITAL-PROZESS	HG51CS035TE	(IC1102)	HG51CS035TEA	(IC1103)
TREIBERIMPULS-GEN.	µPD16510GR	(IC1103)		
DIGITAL µP (D-µP)	HD6433042ST-29F	(IC1104)	HD6433042T13F	(IC1106)
EEP-ROM	MX25S67MR	(IC1105)		
	AUTOFOKUS			
F. DET/BLENDEN-TREIBER	µPC5023GS-105	(IC1201)		
ZOOM-MOTOR-TREIBER	MPC17A34ZVM	(IC1301)	MPC17AT85VM	(IC1301)
FOKUS-MOTOR-TREIBER			MPC17AT85VM	(IC1302)
	SYSTEMSTEUERUNG/SERVO			
SYSTEM-/SERVO-STEUERUNGS-µP	CXP87240-117R	(IC0901)	CXP87240-107Q/-110Q	(IC0901)
BACK-UP DET	S84233FS	(IC0902)	S84206F	(IC0902)
PEGEL-VERSCHIEBUNG	Nicht mitgeliefert		HD74HCT125T	(IC0903)
ZEICHENGEN.	BU6229FV	(IC0904)	XLU5949AFS	(IC0904)
PEGEL-VERSCHIEBUNG	SN74AHCT126PW	(IC0905)	Nicht mitgeliefert	
ATF	µPC5023GS-122-E1	(IC0601)	µPC5023GS-079-E1	(IC0601)
KOPFTROMMEL-MOTOR-TREIBER	LB1950V-TLM	(IC0631)	LB1888V	(IC0631)
LADE-MOTOR-TREIBER	BA6417F	(IC0671)		
CAPSTAN-MOTOR-TREIBER	LB1881V (auf dem Capstanmotor)			
	AUDIO			
AUDIO-PROZESS	Stereo: HA118193F Mono: HA118193F-01	(IC0401) (IC0401)		
	GS/GS-UMFORMER			
PWM	BA9735KV	(IC0551)	TL14641PT	(IC0551)
	VORVERSTÄRKER			
VIDEOKOPF-SCHALTER	HA118189MPER	(IC0101)	HA118189MPER	(IC0101)
PHASEN-ENTZERRER/FM-SPITZENWERT	µPC5023GS-101-E1	(IC0102)		
	LUMINANZ/CHROMA			
LUMINANZ/CHROMA-PROZESS	HA119192AF	(IC0201)	HA118192AF/HA1181372F	(IC0201)
1H-VERZÖGERUNG	CXL5517N	(IC0202)		
CCD-1H-VERZÖGERUNG	CXL5508M	(IC0203)		
VIDEO-VERSTÄRKER	µPC5023GS-104-E1	(IC0204)		
FARBABGLEICH	CXA2003N	(IC0301)		
	SUCHER			
VIDEO-VERST./V.H.ABLENKUNG	HA118179F	(IC2001)		
	LCD-MONITOR			
LCD-VIDEO-PROZESS	IR3Y29AM	(IC5301)	TS9622 (LCD-MODUL)	(LD3501)
LCD-REG.	TL5001CD	(IC5401)		
LCD-REG.	TL5001CD	(IC5501)		
LED-TREIBER	NJM2406F	(IC5502)		
LCD-TREIBER	LZ95NA1	(IC5601)		
IMPULSGENERATOR	NJM3414	(IC5602)		

Vorrichtungen und Bänder für die Einstellung

1. Abgleichband, Farbbalken/400 Hz (20HSC-3) Nr. 7099232 	2. Cassetten-Drehmomentmesser SRK-ST-232: Nr. 7099236 SRK-ST-212: Nr. 7099402 	3. Hauptmeßlehre Nr. 7099237 	4. Wickeltellerhöhen-Einstellvorrichtung Nr. 7099238 
5. Spezialtreiber Nr. 7099239 	6. ATF-R Vorrichtung (*1, *2) Nr. 7099461 	7. C12 Lichtbalancefilter 46 mm Nr. 7099369 	✻8. 10-Stift Verlängerungskabel Nr. 7069183 
9. 2-Stift Verlängerungskabel Nr. 7069038 	10. 10-Stift Verlängerungskabel Nr. 7069039 	11. 9-Stift Verlängerungskabel Nr. 7069040 	12. 20-Stift Verlängerungskabel Nr. 7069112 
13. DSP AV Ausgangs-vorrichtung Nr. 7099456 	14. DSP-R Vorrichtung Nr. 7099448 	✻15. Diskette für Einstellung (3,5-Zoll) Nr. 7069118 	★16. Personal-Computer 
★17. Personal-Computer 9-Stift oder 25-Stift Kabel (RS-232C gerader Typ) 	18. AV Eingangskabel Nr. 5860771 	■19. AV Ausgangskabel (*3) (mit den Cinch-Buchsen)  (mit der 20-Stift AV-Buchse) 	

Für Markierungen

✻: Neue Vorrichtungen und Werkzeuge ★: Im Fachhandel erhältlich ◆: Sonderzubehör ■: Mitgeliefertes Zubehör

Vorsichtsmaßnahmen hinsichtlich der Vorrichtungen

*1: Immer den Schalter SW3 auf der ATF-R Vorrichtung auf ON stellen.
*2: Die ATF Vorrichtung (Nr. 7099386) kann ebenfalls anstelle der ATF-R Vorrichtung für die Einstellung dieses Modells verwendet werden.
*3. Entweder das Mono- oder Stereo-AV-Eingangs/Ausgangskabel kann verwendet werden.
*4. Um die Video- und Audiosignale liefern zu können, muß das AV-Eingangskabel modifiziert werden. (Für das Modifizieren siehe nächste Seite.)

Verwendung der neuen Verlägerungskabel

Bezeichnung der Verlägerungskabel	Teile Nr.	Verwendung
10-Stift Verlängerungskabel	7069183	Kabel für Stromversorgung des Video-Kamerarecorders nach dem Abnehmen des Gehäuses. (Stifte 1 und 2: Positiv, Stifte 6 und 7: Negativ) Stromversorgungskabel für die Einstellung des Stromversorgungs-Abschaltpegels. **Hinweis:** Falls das Kabel für die Einstellung des Stromversorgungs-Abschaltpegels verwendet wird, die Stifte 3 und 5 mit Stift 6 oder 7 (Erdung) kurzschließen.
2-Stift Verlängerungskabel	7069038	Eingebaut zwischen der VCA-Leiterlatte und dem Lademotor.
10-Stift Verlängerungskabel	7069039	Eingebaut zwischen der VCA-Ltleiterplatte und der Kopftrommel. **Hinweis:** Bei Verwendung dieses Verlängerungskabels kommt es zu Rauschstörungen im Wiedergabebild. Dieses Kabel wird verwendet, um die Spannung und Wellenformen zu prüfen. Die Bildqualität in dem normalen Anschlußstatus prüfen.
9-Stift Verlängerungskabel	7069040	Eingebaut zwischen der VCA-Leiterplatte und dem Capstan-Motor.
20-Stift Verlängerungskabel	7069112	Eingebaut zwischen die SE- und VCA-Leiterplatten.

Vorgang zur Modifikation des AV-Eingangskabels

Obwohl nicht alle Modelle über die AV-Eingangsfunktion verfügen, können Sie das AV-Eingangskabel so modifizieren, daß die Video- und Audiosignale eingegeben werden können. Für die Einstellung und die Leistungs-prüfung ist das AV-Eingangskabel gemäß folgenden Vorgängen zu modifizieren, um die Signale eingeben zu können.

Vorsicht 1: Das AV-Eingangskabel nicht für andere Zwecke als die Einstellung und die Leistungsprüfung modifizieren.

Vorsicht 2: Das AV-Eingangskabel richtig modifizieren. Falls ein falsch modifiziertes AV-Eingangskabel an einen Video-Kamerarecorder angeschlossen wird, kann es zu Fehlbetrieb kommen.

Das AV-Eingangskabel modifizieren.

Den Anschluß von Stift 13 des AV-Eingangskabels von Masse auf Stift 2 (DC5V) ändern. (Nachdem geprüft wurde, daß Stift 13 und Masse nicht verbunden sind, Stift 13 mit Stift 2 (DC5V) verbinden.

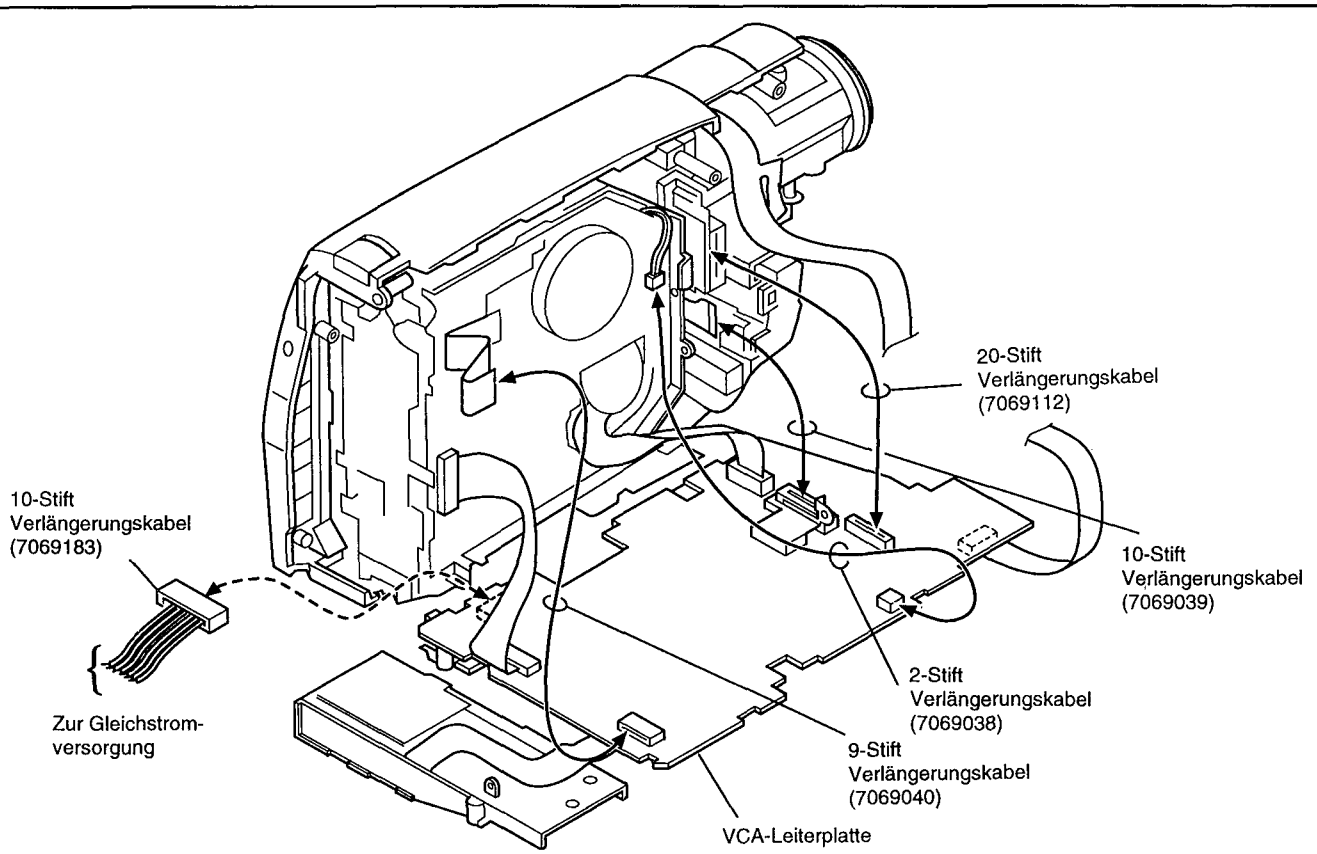


Abb. 1-1 Verlängerungskabel-Anschlußdiagramm

Wartungsanleitung-Abkürzungsliste

A	
ACC	Automatic Color Control
ADD	Adder
ADRS	Address
AF	Automatic focus (Autofocus)
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
AGC KILLER	AGC Killer Voltage
AI	Automatic Intelligence
AIC	Automatic Iris Control
ALC	Automatic Level Conrol
AMP	Amplifier
APC	Automatic Phase Control
ASBL	Assemle (Phase Matching)
AUD.	Audio
AUX	Auxiliary
A/D	Analog-to-Digital Converter
A.DUB	Audio Dubbing
B	
B (BLU)	Color Signal Blue
BATT.	Battery
BF	Burst Flag
BG	Burst Gate or Back Ground
BGP	Burst Gate Pulse
BLK	Blanking
BPF	Bandpass Filter
BUF.	Buffer Amplifier
B-YL	Color Difference Signal B-YL
C	
C (CHROMA)	Chrominance Signal
CAM	Camera
CAPST.	Capstan
CARRI.	Carrier
CATV	Cable TV
C.BLK	Composite Blanking
CCD	Charge Coupled Device
CDS	Correlated Double Sampling
CG	Character Generator
C.FG (CFG)	Capstan Frequency Generater
C.FREE RUN	Capstan Free Run
CH (Ch or ch)	Channel
CHARA.	Character
CHD	Camera Horizontal Drive Pulse
C.MEMORY	Counter Memory
CNR	Chroma Noise Reducer
COM.	Common
COMPA.	Comparator
COMPE.	Compensator
COMP-EXP	Compressor-Expander
COMPO	Composite
CONT.	Control
CONV.	Converter
COUNT.	Counter
CP	CP
C.PAUSE	Camp Pulse
C/R	Capacitor/Resistor
C.RESET	Countor Reset or Camera Reset

C	
C.REVERSE	Count Reverse
CS	Communication Signal
CST	Cassette
C.SYNC	Composite Synchronizing Signal
CTL	Control Track Pulse (Control)
CYL	Cylinder
D	
D (Digital)	Digital
DA	Double Azimuth
D/A	Digital to Analog Converter
D-D	Direct Drive
DEEMPHA.	Deephasis
DEF	Deflefction
DEMOD.	Demodulator
DET	Detector
DIFF. AMP	Differential Amplifier
DISP.	Display
DL	Delay Line
DO	Dropout
DOC	Dropout Compensator
DSP	Digital Signal Processor
D/W	Dark/White
D.ZOOM (DZ)	Digital Zoom
E	
EAROM (EA-ROM)	Electrically Alterable Read Only Memory
EEPROM (EEP-ROM)	Electrical Erasable Proframmed
E-E	Electronic-to-Electronic
EIS (E.I.S.)	Electronic Image Stabilizer
EMPHA. (EMPH)	Emphasis
EQ	Equalizer
ESS	Supply End Sensor
EST	Take-up End Sensor
EVF	Electronic Viewfinder
EXT.	External
E.ZOOM	Electronic Zoom
F	
F.ADV	Frame Advance
F/V	Frequency-to-Voltage Converter
FB	Feed back
FE	Full Erase
FF (F/F)	Flip Flop
F.FWD	Fast Forward
FG	Frequency Generator
FM	Frequency Modulation
FREQ.	Frequency
fsc	Sub Carrier Frequency
FWD	Forward
G	
GEN.	Generator
GND	Ground
H	
H (HORIZ.)	Horizontal
HB	Hi-Band

H	
HBF	Horizontal Burst Flag
HD	Horizontal Drive
Hi-Fi	High Fidelity
HPF	High-pass Filter
I	
IF	Intermediate Frequency
INDI.	Indicator
INST.	Instant
INT.	Internal
INV.	Inverter
I/O	In/Out (Input/Output)
IR	Infrared Rays
L	
LB	Low-Band
LCD	Liquid Crystal Dissplay
LIN.	Linear
LM	Loading Motor
LNC	Line Noise Canceller
LOG	Logarithm
LP	Long Play
LPF	Low-pass Filter
LUMA	Luminance
L/R	Left/Right
M	
MAN	Manual
M.BRAKE	Main Brake
M.CUT	Monitor Cut
MEM.	Memory
MIC	Microphone
MIX	Mixer
MMV	Monostable Multivibator
MOD.	Modulator
M.STATE	Mechanism State
M.STOP	Memory Stop
N	
NEG	Negative
NFB	Negative Feed Back
NOR. (NORM)	Normal
NR	Noise Reduction
O	
OB	Optial Black
OSC	Oscillator
OSD	On-Screen Display
P	
PB (PLAY)	Playback
PG	Pulse Generator
PLL	Phase Locked Loop
POS.	Positive
PROG.	Program
PROT.	Protector
PWM	Pulse Width Modulation
R	
R (RED)	Color Signal Red
RAM	Random Access Memory
REC	Record
RECT.	Rectifier

R	
REF.	Reference
REG.	Regulator
REV	Review
REW	Rewind
RF	Radio Frequency
ROM	Read Only Memory
RSS	Supply Reel Sensor
RST	Take-up Reel Sensor
R-YL	Color Difference Signal R-YL
S	
SAW	Sawtooth Signal
SC1 (0)	3.58MHz Subcarrier Signal 1 (0-degree Phase Shifted)
SC2 (90)	3.58MHz Subcarrier Signal 2 (90-degree Phase Shifted)
SEPA. (SEP)	Separator
S/H	Samle and Hold
SP	Standard Play or Speaker
S.REEL	Supply Reel Sensor
SRCH	Search
SRV	Servo
STABI.	Stabilizer
S.TRACK	Slow Tracking
STBY	Standby Mode
S-VHS	Super VHS
SW	Switch
SW30Hz (15 or 25Hz)	30Hz Head Switching Pulse (15 or 25Hz Head Switching Pulse)
SYNC	Synchronizing signal
SYS.CON	System Control
T	
T (TELE)	Telephoto Angle
T.BRAKE	Take-up Brake
TP	Test Point
T.REEL	Take-up Reel Sensor
TRS	Transfer
V	
V (VERT.)	Vertical
V.AGC	AGC Voltage
VCO	Voltage Controlled Oscillator
VD	Vertical Drive
V.DUB	Video Dubbing
VHS	Video Home System
VOL.	Volume
VP	Voltage Pulse
VCXO	Voltage Controlled Crystal Oscillator
W	
W (WIDE)	Wide Angle
WHT	Color Sifnal White
WHD	Wide Horizontal Drive
WHT BAL.	White Balance
Y	
Y	Luminance Signal
Y/C	Luminance/Chrominance
YEL (Ye)	Color Signal Yellow
YL	Luminance Signal (Low Component)

Identifikation der leiterfreien (Chip) Komponenten

1. Leiterfreier Transistor

Die Teile-Bezeichnung eines leiterfreien Transistors ist durch eine Code auf seiner Oberfläche angegeben, wofür ein Buchstabe, zwei Buchstaben und eine Ziffer, zwei Buchstaben, zwei Buchstaben und eine Ziffer, zwei Ziffern, zwei Ziffern und ein Buchstabe, drei Buchstaben oder vier Buchstaben verwendcet werden.

Hinweis: Es gibt Transistoren mit dem gleichen Code aber unterschiedlicher Teile-Bezeichnung oder mit der gleichen Teile-Bezeichnung aber unterschiedlichem Code. Für die endgültige Identifikation eines Transistors daher in der Stückliste nachsehen.

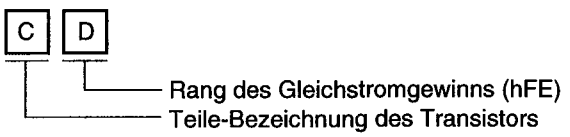
Code	Teile-Bezeichnung	Code	Teile-Bezeichnung
Leiterfreier (Chip) Transistor			
3925	2SC3925	BR	2SC2412K
1CQ	2SB902	BR	2SC4617
1D	2SC3127	BS	2SC2412K
1DS	2SD1328S	C-7	2SA811
1DT	2SD1328	C1G	KSC1623
1R	2SB970TX	CB	2SC3646
2BQ	2SK374PQ	CC	2SA1122C
2BR	2SK374QR	CC	2SC3647T
2Y	2SC3757	CC	2SC3647
2YQ	2SC4691	CD	2SA1122D
3N	2SK620	CE	2SA1122E
4N	XN5601	CK	2SD999
4Q	XN1B301	CP	2SC4097
4R	XN1C301	CQ	2SC2411K
5C	XN4601	CR	2SB710
5C	XP4601	CR	2SC2411
5H	XP4501	CR	2SB1219
5H	XN4501	D16	2SC1622A
5K	XP4401	D17	2SC1622A
5K	XN4401	D18	2SC1622A
5L	XN5501	DB	2SD1766
5N	XN6501	DE	2SC2463
5O	XN6401	DF	2SD1623
5R	XP1501	DF	2SD1898
5R	XN1501	DG	2SD1624
5S	XN1504	DK	2SB798
5V	XN1401	EC	2SA1022
5W	XN2501	F-2	2SC1009F2
5X	XN4504	F-3	2SC1009F3
7R	XN2401	F-4	2SC1009F4
7S	XN1601	FC	2SC2619
AA	2SD1757K	FR	2SA1774
AKQ	2SA1738	FR	2SA1037K
AKQ	2SA1806	FR	2SA1576R
AL	2SA1791	FS	2SA1037K
AM	2SC4656	GC	2SC2734
AO	2SB709AQR	GM	3SD1615
AQ	2SB709AQ	HQ	2SA1036K
AQ	2SB766	IC	2SC3016
AR	2SB1462	IRD	2SA1484
AR	2SB766	IS	2SB792S
AR	2SB709ARS	IT	2SB792T
AR	ASB1218R	L-4	2SC1623L4
AS	2SB766	L-5	2SC1623L5
AS	2SB709AS	L-6	2SC1623L6
B3	2SC1621B3	L-6	2SC2812L6
B4	2SC1621B4	L-7	2SC2812L7
BC	2SB1188	L5	MMBC1623L5
BD	2SB1121	L6	MMBC1623L6
BE	2SB1260	LB	2SC2462B
BF	2SB1123	LC	2SC2462C
BF	2SB1308	LD	2SC2462D
BG	2SB1124	LR	2SC2412KLN
BH	2SB1001	M-5	2SA812
BQ	2SB709A	M-6	2SA1179
BR	2SC4081R	MC	2SA1052MC

Code	Teile-Bezeichnung	Code	Teile-Bezeichnung
Leiterfreier (Chip) Transistor			
MD	2SA1052MC-D	ZS	2SD874S
N3	2SC1653	VR	2SD968A
ND	2SD1306ND	W1	FMW1
NE	2SD1306NE	W10	FMW10
PD	2SA1171D	W2	FMW2
PS	2SD814	W3	FMW3
QB	2SC2620QB	WR	2SD602
QC	2SC2620QC	X1	UMX1
QO	2SC2714	X1	IMX1
R22	2SC4226	X2	IMX2
R22	2SC3356	Y1	FMY1
R32	2SC4227	Y12	2SA1464
R34	2SC3583	Y25	NTM3906
R42	2SC3585	Y3	FMY3
RB	2SC2618RB	YCD	2SK197
RC	2SC2618RC	YI	2SA1666
RK	2SC3357	YQ	2SD601YQ
S1	FMS1	YR	2SD601YR
S2	FMS2	YR	2SD1819R
SC	2SA1121	YR	2SD2216
SO	2SA1162	YS	2SD601YS
SP	2SC3082K	Z1	IMZ1
T1	IMT1	Z2	IMZ2
T1	UMT1	ZO	2SD874T
T2	IMT2	ZQ	2SD601A
UD	2SC2404	ZR	2SD874R
Digital-Transistor			
3	DTC143TK	6C	UN9113
4	DTC114TK	6S	XP4113
6	DTC144TK	8B	UN5212
13	DTA143EK	8C	UN9213
14	DTA144EK	8C	UN2213
15	DTA124K	8S	XP4213
15	DTA124EU	9L	XP1213
16	DTA144EU	9L	XN1213
16	XDA144EK	A1	FMA1
16	DTA144EE	A1	UMA1
23	DTC143EK	A2	FMA2
24	DTC114EU	B2	UMB2
24	DTC144EK	B2	IMB2
25	DTC124EU	C2	FMC2
25	DTC124K	C5	FMC5
26	DTC144EE	D2	IMD2
26	DTC144EU	F52	DTB123
26	XDC144EK	G1	FMG1
33	DTA143XK	G2	FMG2
43	DTC143XK	G21	DTD113ZK
52	DTA123XK	G5	FMG5
60	UN511F	H03	DTC343TK
64	DTC114YK	H2	IMH2
80	UN521F	H2	UNH2
4P	XN1A312T	H27	DTC363EK
6B	UN5112	R04	KSR1104
6C	UN2113	R31	FP1L2Q
FET			
30	2SK621	WS	2SK322T
1FQ	2SK321FQ	WT	2SK322T
1FR	2SK321FQR	X15	2SK425
1KP	2SK316	X4	2SK94
2BQ	2SK663	XAF	2SK980FG
DY	2SK1579	YC	2SK197YC
JO	2SK208	YD	2SK197YD
K	3SK166	YE	2SK197YE
K4	2SK160K4	ZD	2SK217ZD
K5	2SK160K5	ZE	2SK217ZE
KB	2SK323		

(1) Identifikation mit zwei Buchstaben
Verwenden Sie diesen Code und die nachfolgende Tabelle für die Identifikation der Transistoren.

Beispiel:

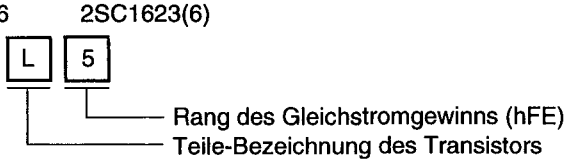
Code	Teile-Bezeichnung
CD	2SA1122D
LD	2SC2462D



(2) Identifikation mit einem Buchstaben und einer Ziffer
Verwenden Sie diesen Code und die nachfolgende Tabelle für die Identifikation der Transistoren.

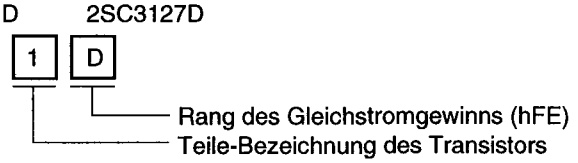
Beispiel:

Code	Teile-Bezeichnung
L5	2SC1623(5)
L6	2SC1623(6)



Beispiel:

Code	Teile-Bezeichnung
1D	2SC3127D

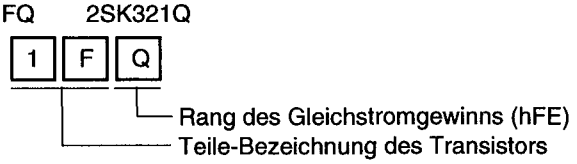


Hinweis: Die Code S1, S2, T1, W1, W2, W3, X1, Y1, Y3, Z1 und Z2 dienen nur für das Codieren der Teile-Bezeichnungen.

(3) Identifikation mit einer Ziffer und zwei Buchstaben
Verwenden sie diesen Code und die nachfolgende Tabelle für die Identifikation der Transistoren.

Beispiel:

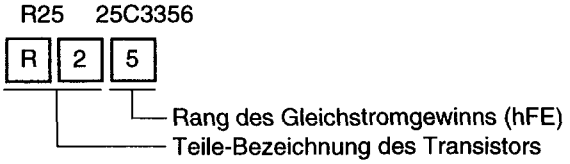
Code	Teile-Bezeichnung
1FQ	2SK321Q



(4) Identifikation mit einem Buchstaben und zwei Ziffern
Verwenden Sie diesen Code und die nachfolgende Tabelle für die Identifikation der Transistoren.

Beispiel:

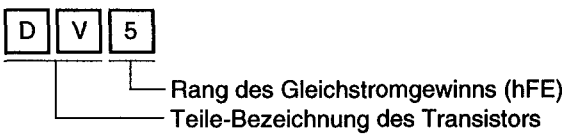
Code	Teile-Bezeichnung
R25	25C3356



(5) Identifikation mit zwei Buchstaben und einer Ziffer
Verwenden Sie diesen Code und die nachfolgende Tabelle für die Identifikation der Transistoren.

Beispiel:

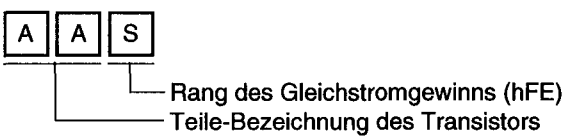
Code	Teile-Bezeichnung
DV5	2SD596



(6) Identifikation mit drei Buchstaben
Verwenden Sie diesen Code und die nachfolgende Tabelle für die Identifikation der Transistoren.

Beispiel:

Code	Teile-Bezeichnung
AAS	2SD1757KS



2. Leiterfreie Diode
Die Teile-Bezeichnung einer leiterfreien Diode ist durch einen Code auf der Oberfläche angegeben, wofür ein Buchstabe und eine Ziffer, zwei Buchstaben, zwei Buchstaben und eine Ziffer, zwei Ziffern und ein Buchstabe oder drei Ziffern verwendet werden.
Verwenden Sie diesen Code und die nachfolgende Tabelle für die Identifikation der Teile-Bezeichnung einer Diode.
Hinweis: Für die endgültige Identifikation einer Diode in der Stückliste nachsehen.

Code	Teile-Bezeichnung	Code	Teile-Bezeichnung
Diode			
0	HVU300A	3D	RB715F
1.0	1SV201	3.0L	MA3030L
2.0	MA3020	3.6L	MA3036L
5.1	MA3051L	3.9L	MA3039L
5.1	MA3051M	4.3H	MA3043H
6.8	MA3068	4.3L	MA3043L
6.8	MA3068M	4.3M	MA3043M
7 5	MA3075L	4.7L	MA3047L
8.2	MA3082M	4.7M	MA3047M
9.1	MA3091	5.1H	MA3051H
20	HZM6	5.1L	MA3051L
24	1SV221	5.1M	MA3051M
27	RD2.7M B	5.6M	MA3056M
30	RD3.0M B	6.2M	MA3062L
51	RD5.1M B2	6.2M	MA3062M
56	RD5 6M B	6.8H	MA3068H
91	RD9.1M B	6.8L	MA3068L
102	RD10M B2	6.8M	MA3068M
122	RD12M B2	6.8M	MA3068
163	RD16M B3	7.5M	MA3075H
182	RD10M B2	7.5L	MA3075L
271	RD2.7M B	8A	UN221D
272	D2.7M B2	8.2H	MA3082H
301	RD3.0M B	8.2M	MA3082M
362	D3.6M B2	9.1M	MA3091M
391	D3.9M B1	9.1M	MA3091
512	RD5.1M B2	10L	MA3100L
561	RD5.6M B	10M	MA3100M
621	RD6.2M B1	11L	MA3110L
681	RD6.8M	12M	MA3120M
683	RD6.8M B3	13H	MA3130H
911	RD9.1M B	18M	MA3180M
2 7H	MA3027H	36M	MA3360
Zener-Diode			
1A	MA110	M3A	MA199
A3	1S2835	MC	MA153
A4	HSM2836C	MC	MA143

Code	Teile-Bezeichnung	Code	Teile-Bezeichnung
Zener-Diode			
A5	1S2837	MH	MA141K
A6	HSM2838C	MH	MA151K
B	SB0505CP	MH	MA152K
B64	SFPB64	MI	MA132K
B74	SFPB74	MN	MA141WA
BE	1SV172	MN	MA152WK
C1	HSM88S	MN	MA151WA
C2	HSM276S	MO	MA132WA
C3	1SS226	MO	MA152WA
C4	HSM88WK	MP	MA133
F7	KV1470	MT	MA151WK
H5	HVM14	MT	MA141WK
J	SB07-03C	MU	MA132WK
K	DA221	MU	MA151WA
M1A	MA159	N	DAN222
M1C	MA158	N	DAN202T
M1M	MA721	NU	MA152WK
M1N	MA713DAT	P	DAP202T
M1P	MA714	S4	D1FS4
M2A	MA122	SA	SB10-05P
M2B	MA123	Z	DA106K

3. Leiterfreier Widerstand

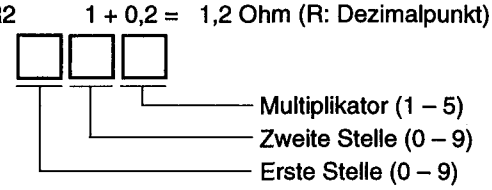
Der Widerstandswert ist auf der Oberfläche des Widerstands angegeben, wofür drei Ziffern oder ein Buchstabe und eine Ziffer verwendet werden.

(1) Identifikation mit drei Ziffern

Diesen Code nach dem gleichen Vorgang wie für das Lesen des Farbecode an diskreten Widersänden lesen.

Beispiel:

Code	Wert
330	$33 \times 10^0 = 33$ Ohm
561	$56 \times 10^1 = 560$ Ohm
123	$12 \times 10^3 = 12$ kOhm
1R2	1 + 0,2 = 1,2 Ohm (R: Dezimalpunkt)



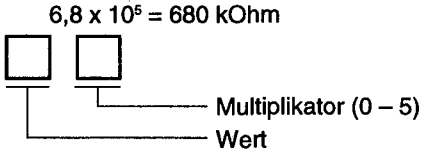
(2) Identifikation mit einem Buchstaben und einer Ziffer

Diesen Code und die nachfolgende Tabelle für die Identifikation der Widerstände verwenden.

Buchstabe	Wert	Buchstabe	Wert	Buchstabe	Wert
A	1	J	2,2	S	4,7
C	1,2	L	2,7	U	5,6
E	1,5	N	3,3	W	6,8
G	1,8	Q	3,9	Y	8,2

Beispiel:

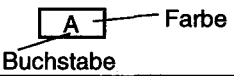
Code	Wert
A1	$1 \times 10^1 = 10$ Ohm
G2	$1{,}8 \times 10^2 = 560$ Ohm
L3	$2{,}7 \times 10^3 = 2700$ Ohm
S4	$4{,}7 \times 10^4 = 47$ kOhm
W5	$6{,}8 \times 10^5 = 680$ kOhm



4. Leiterfreie Kondensatoren

Der Kondensator-Wert ist auf der Oberfläche des Kondensators angegeben, wofür die Gehäusefarbe und ein Buchstabe oder ein Buchstabe und eine Ziffer verwendet werden.

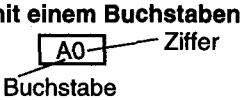
(1) Identifikation mit Gehäusefarbe und einem Buchstaben



Gehäuse-farbe	Buch-stabe	Wert	Gehäuse-farbe	Buch-stabe	Wert
Rot	A	1 (pF)	Blau	A	100 (pF)
	C	2		C	120
	E	3		E	150
	G	4		G	180
	J	5		J	220
	L	6		L	270
	N	7		N	330
	Q	8		Q	390
	S	9		S	470
Schwarz	A	10 (pF)		U	560
	C	12		W	680
	E	15		Y	820
	G	18	Weiß	A	0,001 (µF)
	J	22		E	0,0015
	L	27		J	0,0022
	N	33		L	0,0027
	Q	39		N	0,0033
	S	47		S	0,0047
	U	56		W	0,0068
	W	68	Grün	A	0,01 (µF)
	Y	82		E	0,015
				J	0,022
				N	0,033
				S	0,047
				U	0,056
				W	0,068
				Y	0,082
			Gelb	A	0,1 (µF)

Beispiel:	Farbe	Buchstabe	Wert
	Rot	A	1pF
	Schwarz	A	10pF

(2) Identifikation mit einem Buchstaben un einer Ziffer

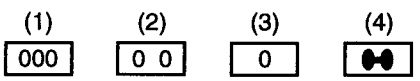


Buchstabe/Ziffer	Wert	Buchstabe/Ziffer	Wert
A0	1 (pF)	A2	100 (pF)
H0	2	C2	120
M0	3	E2	150
d0	4	G2	180
f0	5	J2	220
m0	6	L2	270
n0	7	N2	330
t0	8	Q2	390
y0	9	S2	470
A1	10 (pF)	U2	560
C1	12	W2	680
E1	15	Y2	820
G1	18	A3	0,001 (µF)
J1	22	E3	0,0015
L1	27	J3	0,0022
N1	33	N3	0,0033
Q1	39	S3	0,0047
S1	47	W3	0,0068
U1	56	A4	0,01 (µF)
W1	68	E4	0,015
Y1	82	J4	0,022
		N4	0,033
		S4	0,047
		U4	0,056
		W4	0,068
		A5	0,1

Beispiel:	Buchstabe/Ziffer	Wert
	A0	1 pF
	A1	10 pF

5. Leiterfreie Überbrückung

Die leiterfreie Überbrückung ist angezeigt, wie es nachfolgend dargestellt ist.



Wartungs/Inspektionsvorgang

1. Erforderliche Wartung

Die Aufnahmedichte eines Videorecorders ist viel höher als die eines Tonbandgerätes. Videorecorder-Komponenten müssen sehr präzise sein, um Kompatibilität mit anderen Videorecordern sicherzustellen. Falls eine dieser Komponenten abgenutzt oder verschmutzt ist, werden die gleichen Symptome auftreten, wie bei einem defekten Teil. Um gute Bildqualität sicherzustellen, sind periodische Inspektion und Wartung erforderlich, einschließlich des Austausches von abgenutzten Teilen und Schmierung.

2. Regelmäßige Wartung

Wartung und Inspektion müssen in Abhängigkeit von der Verwendungsdauer des Videorecorders und den Umgebungsbedingungen bei der Verwendung des Videorecorders durchgeführt werden. Allgemein kann gesagt werden, daß eine gute Bildqualität sichergestellt wird, wenn Inspektion und Wartung alle 500 Betriebsstunden durchgeführt werden. Tabelle 1 zeigt den Zusammenhang zwischen der Verwendungszeit pro Tag und den Inspektionsintervallen.

Tabelle 1

Durchschnittliche Verwendung pro Tag	Inspektionsintervall		
	Etwa 6 Monate ↓	Etwa 9 Monate ↓	Etwa 18 Monate ↓
Eine Stunde	▨	▨	▨
Zwei Stunden	▨	▨	
Drei Stunden	▨		

3. Prüfung vor Beginn von Reparaturen

Die im Wiedergabebild auftretenden Fehler, wie in Tabelle 2 aufgeführt, können durch Reinigen und Ölen behoben werden. Die Notwendigkeit einer Schmierung und die Bedingungen hinsichtlich der Sauberkeit der Einheit prüfen. Den Kunden über die Verwendungshäufigkeit befragen. Falls Sie anhand dieser Informationen eine Inspektion und Wartung der Einheit erforderlich halten, die in Tabelle 2 aufgeführten Teile prüfen.

Tabelle 2

Phänomen	Inspektionspunkt
Schlechter Signal-Rauschspannungs-abstand, keine Farbe	Schmutz am Videokopf oder abgenutzter Videokopf
Band läuft nicht oder bildet Schleifen	Schmutz an der Andruckrolle, Kopftrommel oder im Bandlaufwerk
Vertikaler Jitter	Schmutz auf dem Videokopf oder in dem Bandtransportsystem
Niedrige Lautstärke oder verzerrter Ton	Schmutz am Videokopf oder abgenutzter Videokopf

4. Für Inspektion und Wartung erforderliche Werkzeuge

(1) Kopfreinigungssatz
(2) Videorecorder-Öl und -Fett (Tabelle 3)
(3) Alkohol
(4) Watte
(5) Reinigungsband (Maxell 8M-CL MCA (Trockentyp))

Tabelle 3 Schmierpunkte (Fett oder Öl)

Schmiermittel	Schmierpunkt (Öl oder Fett)
Sonic Slidas Oil (#1600)	Langsam rotierende Abschnitte ölen
Froil (G31-SAY)	Metall- oder Kunststoffteile unter geringer Last schmieren
Molicoat (PG-641)	Metall- oder Kunststoffteile unter geringer Last schmieren
Sicherungslack	Einstellschrauben fixieren

5. Wartungsvorgang

5-1 Reinigen

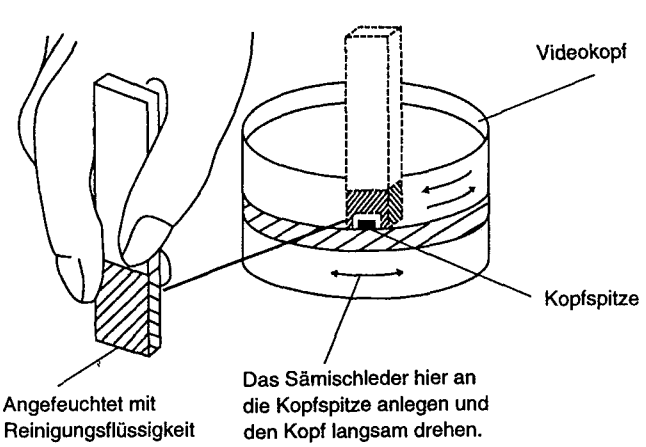
(1) Reinigen des Videokopfes

Zuerst ein Reinigungsband verwenden. Unbedingt das vorgeschriebene Reinigungsband verwenden und die damit mitgelieferte Anleitung vor der Verwendung aufmerksam durchlesen. Falls der Schmutz mit Hilfe des Reinigungsbandes nicht von dem Kopf entfernt werden kann, den Reinigungsatz verwenden. Ein Reinigungsstäbchen an dem gezeigten Punkt mit Reinigungsflüssigkeit anfeuchten. Das Reinigungsstäbchen an der Kopfspitze anlegen und den Kopf (Kopftrommel) vorsichtig nach rechts und links drehen. (Das Reinigungsstäbchen nicht vertikal bewegen und darauf achten, daß nur das Sämischleder des Stäbchens in Kontakt mit dem Kopf kommt. Anderenfalls könnte der Kopf beschädigt werden.) Den Kopf gründlich trocknen. Danach ein Band zur Probe abspielen. Falls Reinigungsflüssigkeit auf dem Videokopf verbleibt, könnte das Band beschädigt werden, wenn es in Kontakt mit der Kopffläche kommt.

(2) Reinigen des Bandtransportsystems, Antriebssystems usw.

Mit in Alkohol angefeuchteter Watte abwischen.
Hinweise:

1) Das Bandtransportsystem ist das System, das in Kontakt mit dem laufenden Band kommt. Das Antriebssystem besteht aus den Teilen, die das Band antreiben.
2) Darauf achten, daß während des Reinigens das Bandtransportsystem nicht mit der Spitze eines Schraubendrehers berührt und das System keinen zu starken Kräften ausgesetzt wird, die das System verformen können.



5-2 Schmierung

(1) Richtlinien für die Ölschmierung

Den Öler verwenden, um ein oder zwei Tropfen Sonic Slidas Öl aufzutragen. Darauf achten, daß nicht zu viel Öl aufgetragen wird, da dieses auf drehende Teile gelangen und Schlupf sowie andere Probleme verursachen kann. Falls zu viel Öl aufgetragen wurde, dieses mit Alkohol abwischen.

(2) Periodische Schmierung

Die vorgeschriebenen Punkte nur schmieren, wenn Komponenten ausgetauscht wurden. Für die Schmierpunkte siehe die Explosionszeichnungen.

5-3 Fettschmierung

(1) Richtlinien für die Fettschmierung

Froil oder Molicoat Fett mit einem Stäbchen oder einem Pinsel auftragen. Nicht zu viel Fett verwenden. Es könnte mit dem Bandtransport oder dem Antriebssystem in Kontakt kommen. Überschüssiges Fett abwişchen und mit in Alkohol angefeuchter Watte reinigen.

(2) Periodische Schmierung

Fett nur auf den vorgeschriebenen Punkten auftragen, wenn Komponenten ausgetauscht wurden. Für die Punkte, auf welchen Fett aufgetragen werden soll, siehe die Explosionszeichnungen.

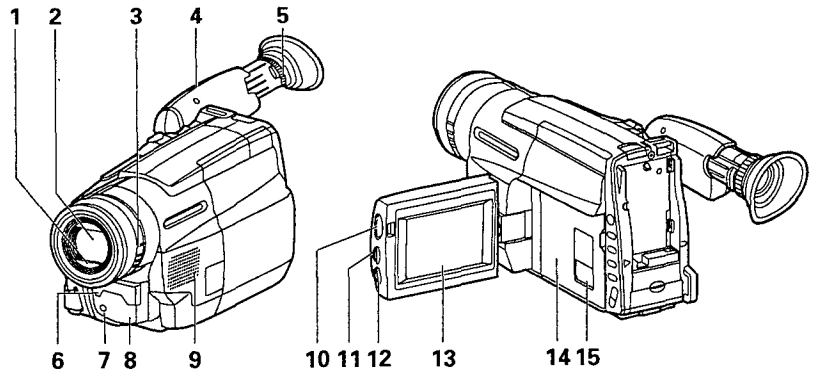
Tabelle 4 Zu wartende/prüfende Teile und Wartungs/Prüfungsplan

Vorsicht: Die folgende Tabelle betrifft nicht alle Einheiten. Der Wartungs/Prüfungsplan hängt von der Verwendung der Einheit und den Umgebungsbedingungen ab.

Komponente \ Stunden	500	1000	1500	2000	2500	3000
Videoköpfe (Kopftrommel)	R	R / A	R	R / A	R	R / A
Vorratsteller-Führungsrolle	R	R	R	R	R	R
Vorratsteller-Führungsstift	R	R	R	R	R	R
Aufwickelteller-Führungsrolle	R	R	R	R	R	R
Ausziehstift	R	R	R	R	R	R
Spannstift	R	R	R	R	R	R
Spannband	–	A	–	A	–	A
Vorratsteller	R	R	R	R / A	R	R
Aufwickelteller	R	R	R	R / A	R	R
Andruckrolle	R	R	R	R / A	R	R
Impedanzrolle	R	R	R	R	R	R
Capstan-Riemen	–	–	–	A	–	–
Zwischenzahnrad	–	–	–	A	–	–
Welle des Capstanmotors (Capstanmotor)	R	R	R	R / A	R	R
Lademotor	–	–	–	A	–	–

R: Reinigen
A: Austauschen des Teils

Bedienungselemente und ihre Funktionen



1. Objektivtür
Den Objektivtüröffner verschieben, um die Objektivtür zu öffnen oder zu schließen. Um das Objektiv zu schützen, die Objektivtür geschlossen halten, wenn keine Aufnahmen ausgeführt werden.

2. Objektiv
Ein motorbetriebenes 16-fach Zoomobjektiv (Lichtstärke 1,4, Brennweitenbereich 4 ~ 64 mm) mit Scharfeinstell- und Blendenautomatik.

3. Objektivtüröffner
Den Öffner verschieben, um die Objektivtür zu öffnen oder zu schließen. Mit der Position OPEN ausrichten, um die Obketivtür für Aufnahmen zu öffnen. Mit der Position CLOSE ausrichten, um die Objektivtür zu schließen.
Den kleinen Knopf in dem Öffner niederhalten, wenn Sie diesen auf Position CLOSE schieben. Dieser Knopf muß jedoch nicht niedergehalten werden, wenn der Öffner auf Position OPEN geschoben wird.

4. Elektronischer Sucher

5. Diopter-Regler
Um den elektronischen Sucher zu verwenden, diesen Regler drehen, um optimale Sucheranzeige in Abhängigkeit von Ihrer Sehschärfe zu erhalten.

6. Stereo-Mikrofon
Dieses Richtmikrofon nimmt die Tonsignale aus der Richtung auf, in die der Video-Kamerarecorder gerichtet wird.

7. Aufnahmeanzeige
Diese Anzeige leuchtet auf, um damit anzuzeigen, daß der Video-Kamerarecorder auf Aufnahme geschaltet ist.

8. Empfangsfenster für Infrarot-Strahlung
Hier wird die Infrarot-Strahlung von der Fernbedienung empfangen.

9. Lautsprecher
Sie können den aufgezeichneten Ton hören.

10. LCD-Monitor-Öffnungstaste (OPEN)
Diese Taste drücken, um den LCD-Monitor zu öffnen.

11. Helligkeitsregler
Diesen Regler für die Einstellung der Helligkeit des LCD-Monitor-Bildschirms verwenden.

12. Lautstärkeregler
Diesen Regler für die Einstellung der Lautstärke verwenden, wenn ein Wiedergabebild am LCD-Monitor betrachtet wird.

13. LCD-Monitor
Sie können die Bilder während der Aufnahme und sofort danach während der Wiedergabe am 3-Zoll-Bildschirm des LCD-Monitors betrachten.

14. Cassettenhalter
Den Auswurfschalter (EJECT) betätigen, um den Cassettenhalter zu öffnen. Die Cassette richtig einsetzen.
Hinweis: Eine Stromversorgung muß angeschlossen sein, um den Cassettenhalter öffnen zu können.

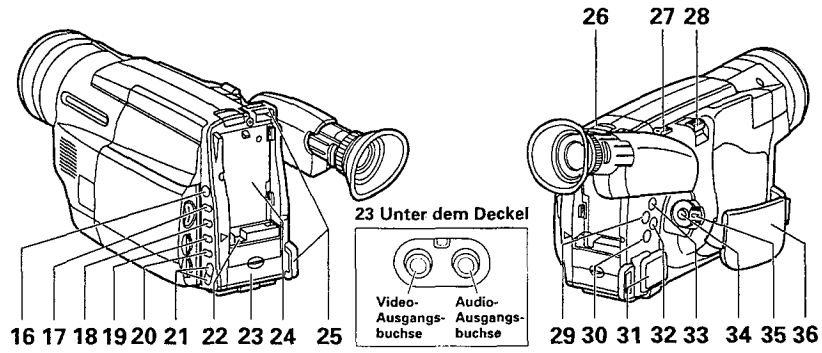
15. Cassettenhalter-Schließtaste
VORSICHT: Unbedingt diese Taste drücken, um den Cassettenhalter zu schließen. Anderenfalls kann es zu Bandschlaufen und Beschädigung des Bandes kommen.

16. Instant-Zoom-Taste (INST. ZOOM)
Diese Taste verwenden, um das aufzunehmende Bild momentan um das 1,5-fache zu vergrößern.

17. EIS- (Electronic Image Stabilizer) Taste
Diese Taste drücken, um " " im Sucher oder am LCD-Monitor anzuzeigen. Die EIS-Funktion korrigiert für leichtes Wackeln des aufzunehmenden Bildes.

18. Digital-Effekt-Taste (D.EFFECT)
Diese Taste verwenden, um spezielle Effekte Ihren Aufnahmen hinzuzufügen. Dabei können Sie zwischen fünf Modi wählen - 16x9 Modus, Negativ/Positiv-Modus, X130 Digital-Zoom-Modus, Halbspiegel-Modus und Mosaik-Modus.

19. Ein/Ausblendtaste (FADE)
Sie können Ihren Aufnahmen einen professionellen Anstrich verleihen, indem Sie Szenen ein- und ausblenden. Sie können zwischen vier Ein/Ausblend-Modi wählen — Weiß-Einblendung, Wipe-Einblendung, Zoom-Einblendung und Schwarzweiß-Einblendung.



20. Datum/Anzeige-Taste (DATE/DISP.)
Wenn der CAM/OFF/VIDEO-Schalter auf Position CAM gestellt ist, kann diese Taste als DATE-Taste verwendet werden; stellen Sie das Datum und die Zeit ein und wählen Sie die Datum-Anzeige, die Sie aufnehmen möchten. In dem VIDEO-Modus wird die DATE/DISP -Taste als DISPLAY-Taste verwendet.
Hinweis: Unbedingt die Uhrbatterie einsetzen, bevor das Datum und die Zeit eingestellt oder ein Titel kreiert werden.

21. Focus-Steuertasten (FOCUS)
Diese Tasten gleichzeitig drücken, um zwischen automatischer und manueller Fokussierung umzuschalten. Wenn "FOCUS" nicht im Sucher oder am LCD-Monitor angezeigt wird, erfolgt die Fokussierung automatisch. Falls diese Tasten gleichzeitig gedrückt werden und "FOCUS" erscheint, wird der Video-Kamerarecorder auf den manuellen Fokussiermodus geschaltet. Für manuelle Fokussierung die ▲ oder ▼ Taste drücken, um das Objekt scharf einzustellen.

22. DC IN-Buchse
Wenn das Netz-/Ladegerät verwendet wird, ein Ende des Gleichstromkabels (mitgeliefert) an diese Buchse und das andere Ende an die DC OUT-Buchse des Netz-/Ladegerätes anschließen. Wenn ein Autobatteriekabel (Sonderzubehör) verwendet wird, diese Buchse und die DC OUTPUT-Buchse des Autobatteriekabel verbinden.

23. AUDIO/VIDEO-Ausgangsbuchsen (unter dem Deckel)
Sie können ein im Fachhandel erhältliches Audio/Video-Kabel anstelle des AV-Stereo-Ausgangskabels (mitgeliefert) verwenden, wenn das Wiedergabebild am Fernseher betrachtet wird usw.
- Den gelben Stecker des Audio/Video-Kabels an die gelbe Buchse (VIDEO OUT) und den weißen Stecker an die weiße Buchse (AUDIO OUT) anschließen.
- Der Wiedergabeton wird monaural.

24. Stromversorgungs-Anbringabschnitt
Den Akku (mitgeliefert) hier anbringen.

25. Schultergurtösen
Den Schultergurt hier anbringen.

26. Batterie-Auswurfhebel (BATTERY EJECT)
Mit diesem Hebel kann die an dem Video-Kamerarecorder angebrachte Batterie freigegeben werden.

27. Auswurfschalter (EJECT)
Arbeitet bei ein- oder ausgeschaltetem CAM/OFF/VIDEO-Schalter, wenn eine Stromversorgung an den Video-Kamerarecorder angeschlossen ist.

28. Regler für motorbetriebenes Zoomobjektiv
Mit diesem Regler kann die Brennweite des Zoomobjektives elektrisch verstellt werden.
"W"· Brennweitenverstellung in Richtung Weitwinkel.
"T"· Brennweitenverstellung in Richtung Tele.

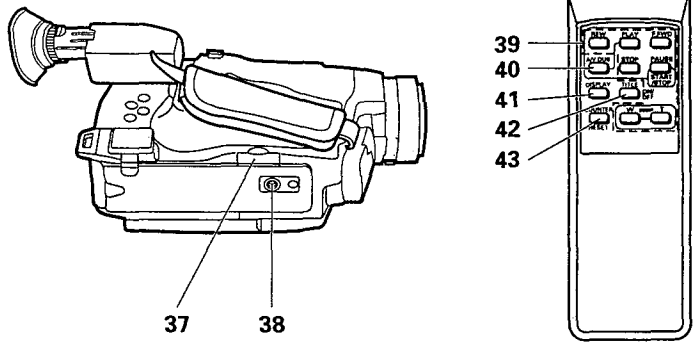
29. Wiedergabetaste (PLAY)
Dient für die Wiedergabe des Bandes.
Hinweis: Wenn der Video-Kamerarecorder auf den Aufnahme-Pausemodus (Bereitschaft) geschaltet ist, dann ist normale Wiedergabe möglich, indem diese Taste betätigt und gedrückt gehalten wird.

30. Stoptaste (STOP)
Mit Hilfe der Stoptaste kann das Bandlaufwerk während der Wiedergabe-, Rücklauf- und Schnellvorlauffunktion abgeschaltet werden. Während der Aufnahmefunktion ist die Stoptaste nicht wirksam. Verwenden Sie auch die STOP-Taste, wenn Sie Datum/Zeit einstellen.

31. Audio/Video-Ausgangsbuchse (unter dem Deckel)
Das AV-Stereo-Ausgangskabel (mitgeliefert) oder den HF-Ausgangsadapter (Sonderzubehör) verwenden, um diese Buchse mit einem Fernseher zu verbinden, so daß die Wiedergabe des Video-Kameraecorders auf dem Bildschirm des Fernsehers gesehen werden kann.

32. Rücklauf-/Durchsichttaste (REW/REVIEW)
Diese Taste während des Stopp- oder Schnellvorlaufmodus drücken, um das Band zurückzuspulen. Diese Taste während der Wiedergabe drücken, worauf das Band mit etwa der 5fachen Normalgeschwindigkeit rückwärts wiedergegeben wird.

Bedienungselemente und ihre Funktionen



Die PLAY- oder die STOP-Taste drücken, um auf die normale Wiedergabe zurückzukehren oder das Bandlaufwerk abzuschalten (siehe "Bildsuchlauf vorwärts und rückwärts" auf Seite 17). Diese Taste auch für die Durchsicht der letzten paar Sekunden des bespielten Bandes verwenden.
Die REW/REVIEW-Taste verwenden, wenn Datum/Zeit eingestellt werden.
Hinweis: Durch Betätigung und Gedrückthalten dieser Taste ist auch Bildsuchlauf rückwärts möglich, wenn der Video-Kamerarecorder auf den Aufnahme-Pausemodus (Bereitschaft) geschaltet ist.

33. Vorlauftaste (F.FWD)
Diese Taste während des Stopp- oder Rücklaufmodus drücken, um das Band schnell vorzuspulen. Falls diese Taste währen der Wiedergabe gedrückt wird, dann wird das Band mit etwa der 7fachen Normalgeschwindigkeit in Vorlaufrichtung wiedergegeben.
Die PLAY-Taste oder die STOP-Taste drücken, um auf die normale Wiedergabe zurückzukehren bzw. das Bandlaufwerk auszuschalten (siehe "Bildsuchlauf vorwärts und rückwärts" auf Seite 17). Verwenden Sie auch die F.FWD-Taste, wenn Sie Datum/Zeit einstellen.
Hinweis: Durch Betätigung und Gedrückthalten dieser Taste ist auch Bildsuchlauf vorwärts möglich, wenn der Video-Kamerarecorder auf den Aufnahme-Pausemodus (Bereitschaft) geschaltet ist.

34. Aufnahme-Start/Stop-Taste
Mit dieser Tasten wird der Video-Kamerarecorder gesteuert. Ist der Video-Kamerarecorder auf den Aufnahme-Pausemodus geschaltet, dann wird durch Drücken dieser Tasten mit dem Aufnahmemodus begonnen.
Durch nochmaliges Drücken wird das Bandlaufwerk angehalten und der Video-Kamerarecorder schaltet auf den Aufnahme-Pausemodus (Bereitschaft).
Diese Taste kann auch verwendet werden, um im Wiedergabe-Modus ein Standbild anzuzeigen.

35. Kamera/Aus/Video-Schalter (CAM/OFF/VIDEO)
Mit diesem Schalter wird der Video-Kamerarecorder in- oder ausgeschaltet. Den Schalter für Kamera-Aufnahme auf Position CAM und für Wiedergabe auf Position VIDEO stellen. Den kleinen roten Knopf niederhalten, wenn der Schalter auf Position CAM oder VIDEO geschoben wird. Sie müssen diesen roten Knopf nicht niederhalten, wenn der Schalter auf Position OFF geschoben wird.

36. Handgurt
Den Gurt so einstellen, daß der Video-Kamerarecorder richtig in der Hand liegt.
(Siehe Seite 7.)

37. Uhrbatteriefach (CLOCK)
Den Batteriehalter herausziehen und die Lithium-Batterie (mitgeliefert) einsetzen.

38. Stativ-Befestigungsschraube
Diese Schraube verwenden, um den Video-Kamerarecorder auf einem Stativ (im Fachhandel erhältlich) anzubringen.

39. Kamerarecorder-Reglertasten auf der Fernbedienung
Diese angelegten Tasten auf der Fernbedienung haben die gleichen Funktionen wie die entsprechenden Tasten auf dem Kamerarecorder.

40. Audio/Video-Editiertaste (A/V DUB) (nur auf der Fernbedienung)
Diese Taste dient für die Aufnahme von neuen Audio- und Video-Signalen anstelle der bestehenden Audio- und Video-Signale.

41. Display-Taste (DISPLAY)
Diese Taste verwenden, um das Display im Sucher oder am LCD-Monitor zu wählen.

42. Titelgenerator-Taste (TITLE ON/OFF) (nur auf der Fernbedienung)
Mit dieser Taste lassen sich Titel abspeichern oder die abgespeicherten Titel wieder abrufen und in die Aufnahmen einblenden.

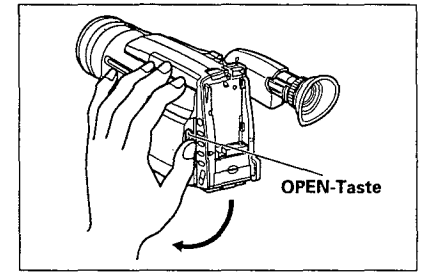
43. Zeitzählwerk-Rückstelltaste (COUNTER RESET) (nur auf der Fernbedienung)
Diese Taste drücken, um das Echtzeit-Zählwerk im Sucher oder am LCD-Monitor auf "0:00:00" zu stellen.

LCD-Monitor

Wenn der LCD-Monitor während der Aufnahme oder Wiedergabe verwendet wird, können Sie die Helligkeit seines Bildschirms und den Winkel des Monitors einstellen.

■ Öffnen des LCD-Monitors

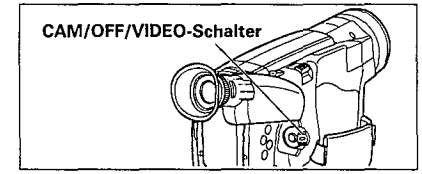
1. Die OPEN-Taste drücken, um den LCD-Monitor zu öffnen.



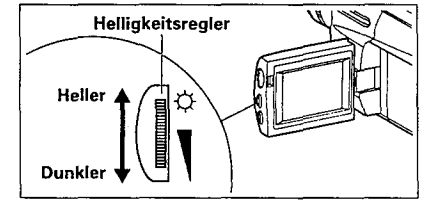
■ Einstellen der Helligkeit des LCD-Bildschirms

Hinweis: Auch wenn das Bild am LCD-Monitor eingestellt wird, wird das aufgezeichnete Video-Bild davon nicht betroffen.

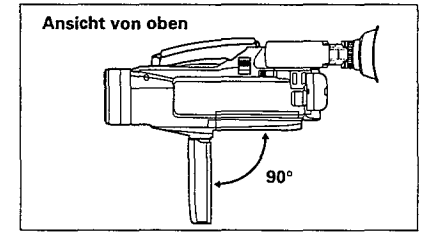
1. Den Akku einsetzen (siehe Seite 11). Den roten Knopf am Betriebsschalter drücken und den CAM/OFF/VIDEO-Schalter auf Position CAM oder VIDEO schieben.

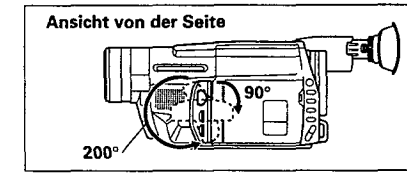


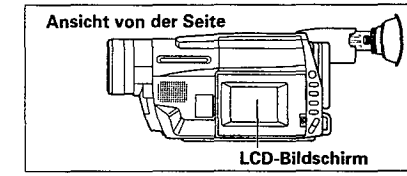
2. Den Helligkeitsregler an der Seite des LCD-Monitors verwenden, um die Helligkeit des LCD-Bildschirms einzustellen.



■ Verstellbereich des LCD-Monitors







■ Vorsichtsmaßnahmen hinsichtlich des LCD-Monitor-Bildschirms

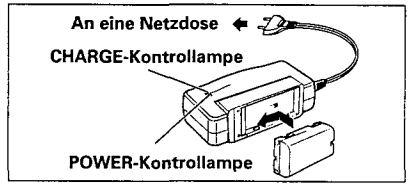
- Den LCD-Bildschirm nicht mit Ihren Fingern berühren, da anderenfalls der Bildschirm verschmutz werden könnte, so daß das Bild nicht klar gesehen werden kann. Falls der LCD-Bildschirm verschmuzt ist, diesen mit einem weichen Tuch sauber wischen.
- Falls der Video-Kamerarecorder an einem kalten Ort verwendet und zu kalt wird, erscheint der LCD-Bildschirm nach dem Einschalten der Stromversorgung für eine Weile blaß. Sobald die Temperatur in dem Video-Kamerarecorder ansteigt, wird die Helligkeit des Bildes wieder normal.
- Niemals den Video-Kamerarecorder am LCD-Monitor festhalten, da dies zu einer Störung führen kann.
- Den LCD-Monitor um 90° öffnen, bevor seine Richtung geändert wird. Falls Sie eine Änderung seiner Richtung versuchen, bevor der LCD-Monitor richtig geöffnet wurde, kann es zu einer Störung kommen.
- Der LCD-Monitor kann nicht geschlossen werden, wenn er geneigt ist.
- Den LCD-Monitor schließen, nachdem Sie sich vergewissert haben, daß der LCD-Monitor parallel zum Video-Kamerarecorder angeordnet ist. Falls Sie den Monitor zu schließen versuchen, wenn dieser in die gleiche Richtung wie das Objektiv weist oder diagonal angeordnet ist, dann kann der LCD-Monitor beschädigt werden.
- Niemals den LCD-Monitor zerlegen, da es sonst zu einer Störung kommen kann.
- Wenn der LCD-Monitor geöffnet wird, darauf achten, daß keine Wassertropfen am Monitor-Bildschirm anhaften und das kein Wasser oder Staub durch den Spalt in den Kamerarecorder eindringt, da es anderenfalls zu Fehlbetrieb kommen kann.

Laden des Akkus

Der erste Schritt besteht darin, daß der Akku für das Laden eingestellt wird. Für das Laden des Akkus ist das mitgelieferte Netz-/Ladegerät zu verwenden.

Hinweis: Dieser Video-Kamerarecorder arbeitet mit einem Lithium-Ionen-Akku wie z.B. dem VM-BPL13/VM-BPL27.

Den Akku auf einer ebenen Fläche aufladen, die frei von Vibrationen ist.



1. Das Netzkabel des Netz-/Ladegerätes an eine Netzdose anschließen. Die POWER-Kontrollampe (rot) leuchtet auf.
2. Die Unterseite des Akkus mit der Markierung "▶" an dem Netz-/Ladegerät ausrichten, und danach den Akku in Richtung des Pfeiles schieben, wie es in der Abbildung dargestellt ist.
   Die CHARGE-Kontrollampe (grün) leuchtet auf.
3. Die CHARGE-Kontrollampe leuchtet wiederholt für drei Sekunden auf und erlischt danach, um damit anzuzeigen, daß der Akku auf etwa 70% seiner Kapazität aufgeladen ist. Wenn die CHARGE-Kontrollampe erlischt, ist der Akku vollständig aufgeladen. Nachdem diese Lampe erlischt, das Netz-/Ladegerät von der Netzdose abtrennen und den Akku aus dem Netz-/Ladegerät nehmen.

Hinweise:

- Sie können den Akku auch verwenden, bevor dieser vollständig aufgeladen ist.
- Das Gleichstromkabel von dem Netz-/Ladegerät entfernen, bevor ein Laden des Akkus versucht wird.
- Fall Sie den vollständig aufgeladenen Akku wieder an dem Netz-/Ladegerät anbringen, nachdem die CHARGE-Kontrollampe erloschen ist, leuchtet diese Lampe wiederum auf. Dies informiert Sie darüber, daß der Akku vollständig aufgeladen ist, und weist nicht darauf hin, daß die Ladung unzureichend ist.

Ladedauer

Ladung \ Akku	VM-BPL13	VM-BPL27
Volle Ladung	130 Min.	230 Min.
70% Ladung	70 Min.	140 Min.

Hinweise:

- Den Akku bei einer Temperatur von 0°C bis 40°C aufladen. Bei Temperaturen außerhalb dieses Bereichs wird eine längere Ladedauer benötigt.
- Der Akku kann bei extrem hohen oder niedrigen Temperaturen nicht aufgeladen werden. Die CHARGE-Kontrollampe blinkt in 2-Sekunden-Intervallen, um damit anzuzeigen, daß kein Ladevorgang ausgeführt wird.

Betriebsdauer

Die Betriebsdauer des Video-Kamerarecorders hängt davon ab, wie häufig die Stromversorgung ein/ausgeschaltet, die Start/Stopp-Taste betätigt bzw. das Zoom verwendet wird.

Aufnahme	Akku: LCD-Monitor	VM-BPL13	VM-BPL27
Kontinuierliche Aufnahme	AUS	120 Min.	270 Min.
	EIN	100 Min.	220 Min.
Typische Aufnahme	AUS	70 Min.	150 Min.
	EIN	55 Min.	120 Min.

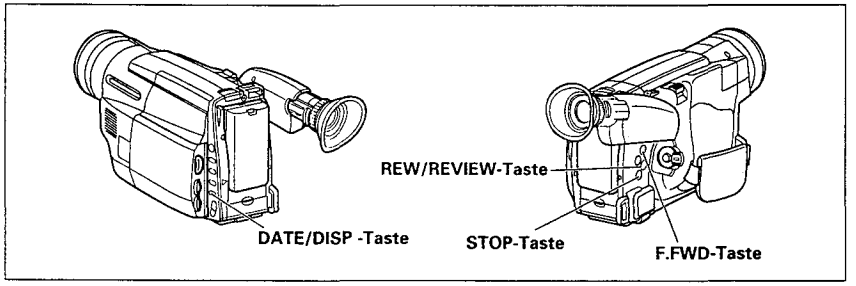
Hinweise zum Akku

- Es wird empfohlen, daß der Akku entladen belassen wird, wenn er nicht verwendet wird. Den Akku immer erst vor der Verwendung aufladen.
- Vermeiden Sie die Lagerung eines voll aufgeladenen Akkus, und lagern Sie den Akku niemals an einem Ort mit hoher Temperatur; der Akku könnte beschädigt werden.
- Niemals den Akku bei Temperaturen von weniger als –10°C bzw. über 45°C verwenden. Bei extrem niedrigen Temperaturen nimmt die Betriebsdauer ab, wogegen bei hohen Temperaturen der Akku beschädigt werden kann.
- Falls die POWER-Kontrollampe während des Ladevorgangs zu blinken beginnt, den Akku entfernen und danach wieder an dem Netz-/Ladegerät anbringen. Wenn auch nach mehreren Versuchen die POWER-Kontrollampe weiterhin blinkt, dann kann der Akku nicht mehr aufgeladen werden, so daß er ersetzt werden muß.
- Niemals einen warmen Akku an dem Netz-/Ladegerät anbringen. Den Akku abkühlen lassen. Die POWER-Kontrollampe blinkt auch, wenn ein warmer Akku an dem Netz-/Ladegerät angebracht wird.
- Im Inneren des Akkus und des Netz-/Ladegerätes befinden sich keine vom Anwender zu wartenden Teile.
- Niemals den Akku in ein Feuer werfen oder einer Temperatur von mehr als 60°C aussetzen, da es sonst zu Verletzungen kommen kann.
- Niemals die Akku-Klemmen kurzschließen, da es sonst zu Feuer- oder Stromschlaggefahr kommen kann.

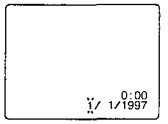
Einstellen von Datum/Uhrzeit

Datum und Uhrzeit können auf Band aufgezeichnet werden, um bei späterer Wiedergabe als Referenz zu dienen. Das derzeitige Datum und die Uhrzeit wie folgt einstellen.
Darauf achten, daß die derzeitige Zeit richtig angezeigt wird, bevor Sie mit der Aufnahme beginnen.

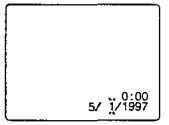
Hinweis: Unbedingt die Uhrbatterie einsetzen, bevor das Datum und die Zeit eingestellt werden. Obwohl Datum und Zeit auch eingestellt werden können, ohne das die Uhrbatterie eingesetzt ist, verschwinden diese Anzeigen, wenn der für die Stromversorgung des Video-Kamerarecorders verwendete Akku abgenommen wird.



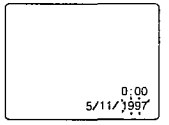
1. Den CAM/OFF/VIDEO-Schalter auf Position "CAM" stellen.
2. Die DATE/DISP.-Taste drücken.
   "0:00" und "1/1/1997" erscheinen im Sucher oder am LCD-Monitor, wobei die "1" blinkt.



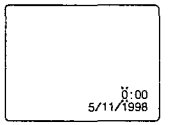
3. Die F.FWD-Taste drücken, um das richtige Datum einzustellen. Die Taste gedrückt halten, wenn ein schnelles Vorstellen gewünscht wird. Falls Sie das gewünschte Datum überschreiten, die REW/REVIEW-Taste drücken. Wenn das richtige Datum angezeigt wird, die STOP-Taste drücken.



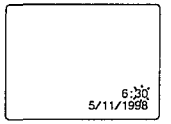
4. Die F.FWD-Taste drücken, um den richtigen Monat einzustellen. Die Taste gedrückt halten, wenn ein schnelles Vorstellen gewünscht wird. Falls Sie den gewünschten Monat überschreiten, die REW/REVIEW-Taste drücken. Wenn der richtige Monat angezeigt wird, die STOP-Taste betätigen.



5. Die F.FWD- oder REW/REVIEW-Taste drücken, um das richtige Jahr einzustellen, und danach die STOP-Taste betätigen.



6. Die F.FWD- oder REW/REVIEW-Taste drücken, um die richtige Stundenanzeige zu erhalten, und danach die STOP-Taste betätigen.
7. Die F.FWD- oder REW/REVIEW-Taste drücken, um die richtige Minutenanzeige zu erhalten.



8. Nach richtiger Einstellung der Minutenanzeige, die DATE/DISP -Taste drücken, um das Display zu ändern und die interne Uhr zu starten.
   Es wird empfohlen, daß Sie die DATE/DISP.-Taste drücken, um die Zeit an ein Zeitsignal anzupassen.

Hinweis: Nachdem das Datum und die Zeit eingestellt wurden, erscheint "◷AUTO" und der Kamerarecorder tritt in den Modus für automatische Aufnahme des Datums ein. Siehe "Aufnahme des Datums" auf Seite 20.

■ Berichtigung von Datum/Zeit nach dem Starten von Datum/Zeit

1. Die DATE/DISP.-Taste gedrückt halten und die STOP-Taste betätigen. Das Datum beginnt zu blinken.
2. Berichtigen Sie die falsche Stelle, indem Sie die F.FWD-, REW/REVIEW- und STOP-Tasten verwenden.

■ Berichtigung von Datum/Zeit während des Programmierens

1. Die STOP-Taste wiederholt drücken, bis die falsche Stelle blinkt.
2. Berichtigen Sie die falsche Stelle, indem Sie die F.FWD-, REW/REVIEW- und STOP-Tasten verwenden.

1. Manuelle Einstellung des Auswurfstatus

Dies ist nicht erforderlich für Video-Kamerarecorder, die normal auf den Auswurfmodus gestellt werden können.

- Dieser Video-Kamerarecorder (Typ 535, 635 oder 835) führt die Auswurf-operation nicht aus, wenn nicht der LCD-Monitor geöffnet ist. Den folgenden Vorgang ausführen, wenn die Cassette durch Drücken der EJECT-Taste nicht ausgeworfen werden kann, nachdem eine Stromversorgung angeschlossen und der LCD-Monitor geöffnet wurde. (Den Anschluß des PG905 auf der VCA-Leiterplatte (siehe Abb. 1-1) und dem LCD-Öffnungs/Schließschalter überprüfen.)

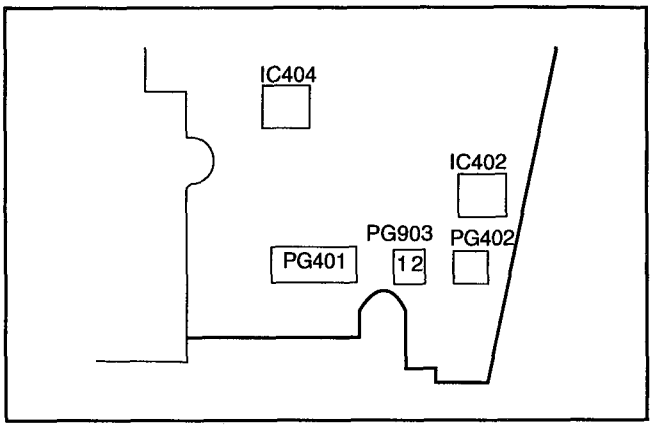


Abb. 1-1

1.1 Ausbau des Cassettenfachdeckels

< Vorgang>

(1) Den Cassettenfachdeckel in Richtung des Pfeiles (A) anheben und eine Pinzette zwischen dem Cassettenfachdeckel und dem linken Gehäuse einsetzen (Abb. 1-2).
(2) Zwei (2) Laschen (C) der Blattfeder in dem Cassettenfachdeckel in Richtung des Pfeiles (B) freigeben und den Cassettenfachdeckel in Richtung des Pfeiles (D) abnehmen.

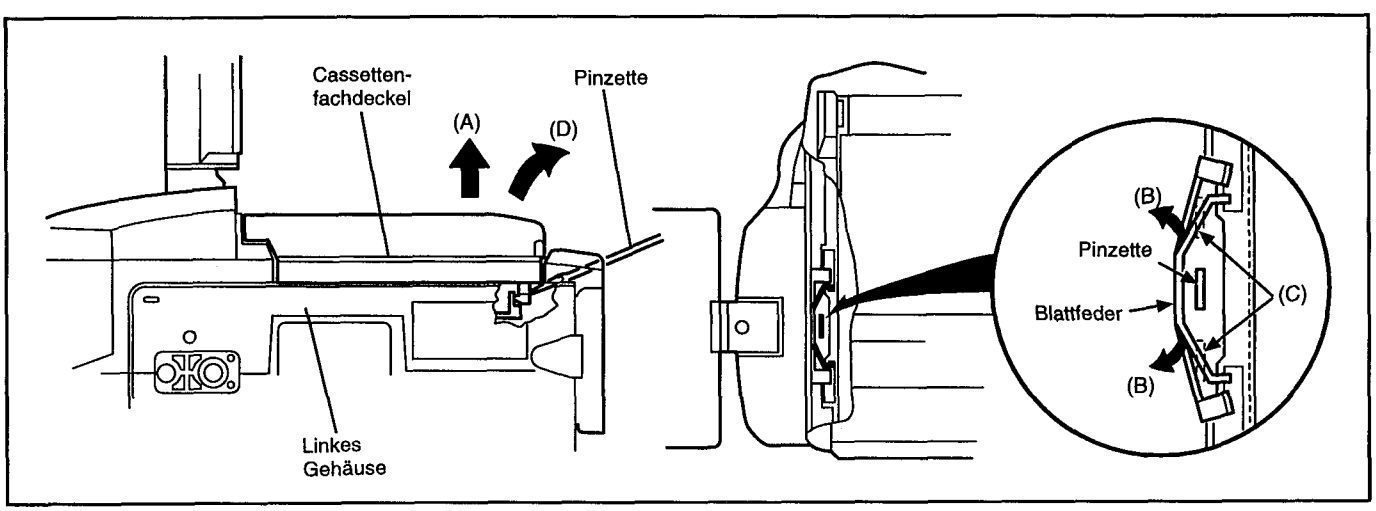


Abb. 1-2

1.2 Entlademethode

Falls der elektrische Schaltkreis defekt ist, eine Spannung an die Steckerklemmen des Lademotors anlegen, nachdem die Komponenten bis zu dem rechten Gehäuseblock entfernt wurden. Der Video-Kamerarecorder kann auf den Auswurfstatus eingestellt werden (siehe Abb. 1-3).
Bei der Stromzufuhr auf die folgenden Punkte achten.

1.2.1 Wenn der Lademotor normal ist (Abb. 1-3)

< Vorgang>

(1) Die Stromversorgung auf 3 - 5 V Gs einstellen.
(2) Den roten Draht an die positive Klemme und den braunen Draht an die negative Klemme anschließen, um das Entladen zu aktivieren. Den braunen Draht an die positive Klemme und den roten Draht an die negative Klemme anschließen, um das Laden zu aktivieren.

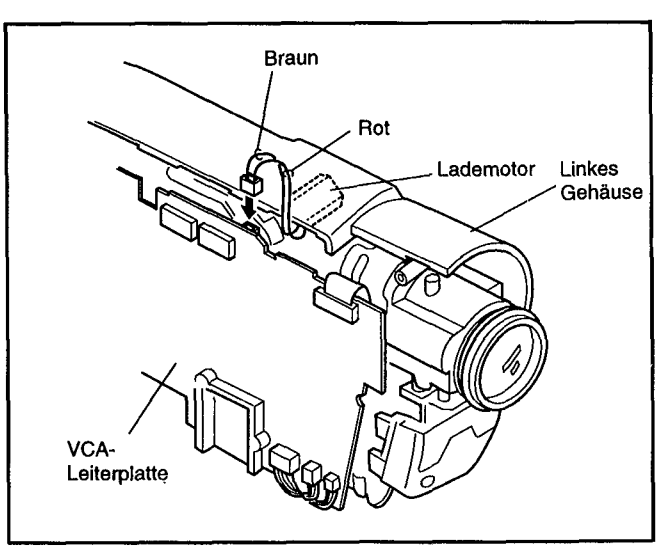


Abb. 1-3

1.2.2 Wenn der Lademotor defekt ist (Abb. 1-4)

< Vorgang>

(1) Die folgenden Teile vorher abnehmen, wie es in den entsprechenden Abschnitten beschrieben ist.
   1) Rechten Gehäuseblock
   2) Hauptblock, Kamerablock, hinteres Gehäuse
   3) VCA-Leiterplatte, VCR-Rahmen, Laufwerkblock
   4) Lademotor

(2) Das Ladezahnrad (1) in die Richtung des Pfeils (F) drehen, um das Band zu entladen (Abb. 1-4).

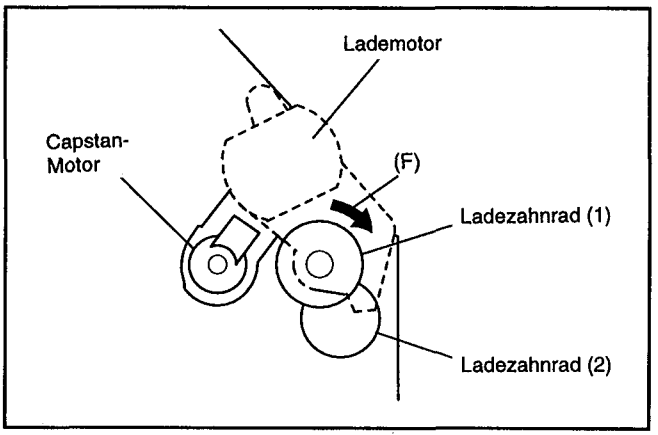


Abb. 1-4

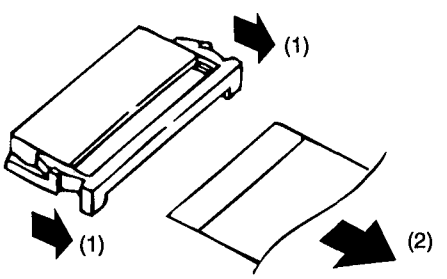
2. Vor Beginn der Demontage

(1) Nicht den Objektivblock zerlegen.

(2) Den Video-Kamerarecorder auf den Auswurfstatus stellen, bevor er demontiert wird. Falls der Video-Kamerarecorder aufgrund eines Defekts nicht auf den Auswurfstatus gestellt werden kann, siehe "1. Manuelle Einstellung des Auswurfstatus".

(3) Dieser Video-Kamerarecorder (Typ 535, 635 oder 835) führt den Auswurfvorgang nicht aus, wenn nicht der LCD-Monitor geöffnet ist.
Um den Video-Kamerarecorder mit ausgebautem Gehäuse auf den Auswurfstatus zu stellen, die PG905 Stifte 1 und 2 auf der VCA-Leiterplatte mit einer Kurzschlußklemme usw. kurzschließen und danach die EJECT-Taste drücken (siehe Abb. 1-1).

(4) Die Flachkabel von den Steckverbindern abtrennen, wie es in Abb. 2-1 dargestellt ist. Da viele Leiterplatten in dem Video-Kamerarecorder über Steckverbinder miteinander verbunden sind, unbedingt die "Demontage" befolgen, wenn Leiterplatten ausgebaut werden.



(1) Die verriegelungen des Steckers an der linken und rechten Seite gleichzeitig freigeben.
(2) Das Flachkabel herausziehen.

Abb. 2-1

3. Ausbau von Gehäusen, Leiterplatte und Laufwerkblock

Zuerst das nachfolgende "Teilehierarchiediagramm" beachten, wenn defekte Teile ausgetauscht werden. Dieses Diagramm zeigt den Teileausbauvorgang in der Hierarchie, in der die Teile ausgetauscht werden sollen.

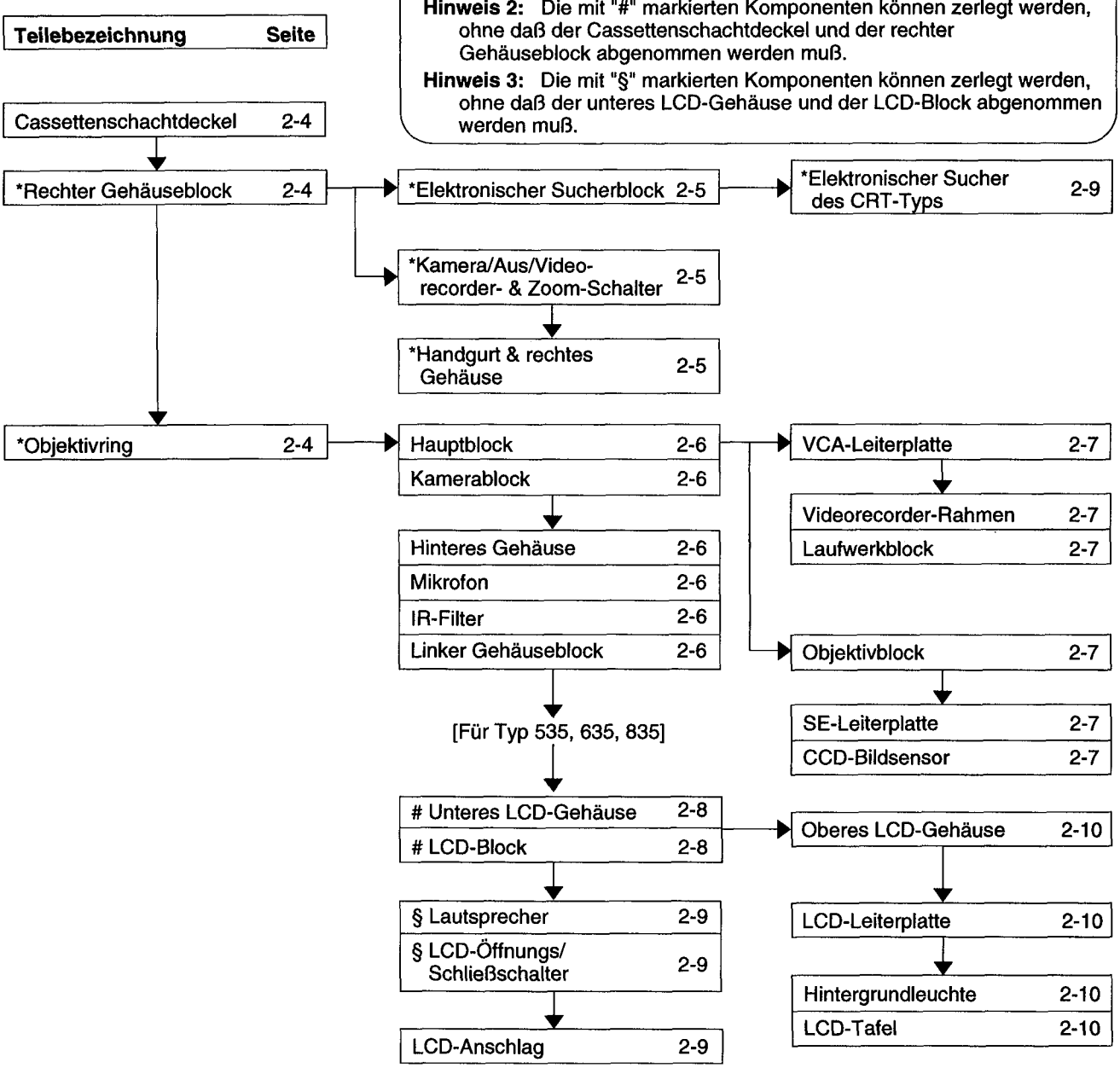
[Verwendung des Teilehierarchiediagramms]

(1) Das auszutauschende Teil im Diagramm auffinden.
(2) Das im Rang über dem auszutauschenden Teil befindliche Teil ünerprüfen und danach die Demontage beginnen.
(3) Das defekte Teil entfernen und das neue Teil mit dem umgekehrten Vorgang zu dem in dem Hierarchiediagramm gezeigten Vorgang einbauen.

(4) **[Ausbauvorgang]**
Die Komponenten in der Reihenfolge der Buchstaben (A, B, C ...) ausbauen.
[Einbauvorgang]
Die Komponenten durch Umkehr des Ausbauvorganges wieder einbauen, wenn es nicht anders aufgeführt ist.

Teilehierarchiediagramm

Hinweis 1: Die mit "*" markierten Komponenten können zerlegt werden, ohne daß der Cassettenschachtdeckel abgenommen werden muß.
Hinweis 2: Die mit "#" markierten Komponenten können zerlegt werden, ohne daß der Cassettenschachtdeckel und der rechter Gehäuseblock abgenommen werden muß.
Hinweis 3: Die mit "§" markierten Komponenten können zerlegt werden, ohne daß der unteres LCD-Gehäuse und der LCD-Block abgenommen werden muß.



3.1 Cassettenschachtdeckel, rechter Gehäuseblock, Objektivring (Abb. 3-1)

<VORSICHT>

1) Das Gerät auf den Auswurfstatus stellen. [Dieser Video-Kamerarecorder (Typ 535, 635 oder 835) führt den Auswurfvorgang nicht aus, wenn nicht der LCD-Monitor geöffnet ist.]
2) Der Gummo-O-Ring löst sich von selbst, wenn der Objektivring abgenommen wird. Unbedingt den Gummi-O-Ring gemäß Abbildung A einbauen.
3) Die Abdeckungen der AV-Ausgangsbuchse an der rechten Seite öffnen, bevor der rechte Gehäuseblock entfernt wird.

<VORGANG>

- Cassettenschachtdeckel ausbauen:
  (1) [Typ 535, 635, 835]-(2)
- Rechten Gehäuseblock & Objektivring ausbauen:
  (3)-(4)-(5)-(6)-(7)-(8)

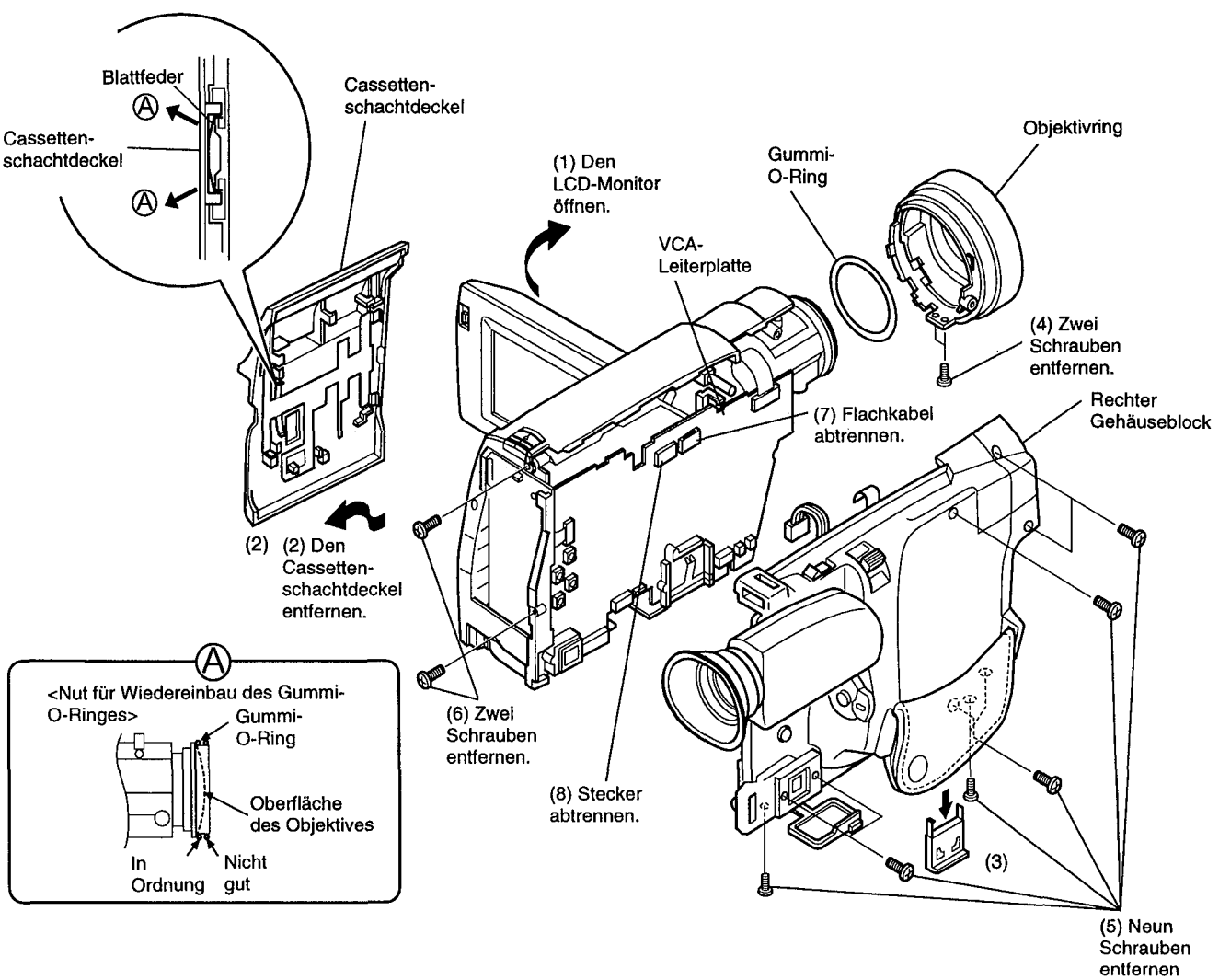


Abb. 3-1

3.2 Kamera/Aus/Videorecorder- & Zoom-Schalter, elektronischer Sucherblock, Handgurt, rechtes Gehäuse (Abb. 3-2)

<VORSICHT>

1) Die Platte des elektronischen Suchers und die Blattfeder lösen sich von selbst, wenn der elektronische Sucherblock entfernt wird.

<VORGANG>

- Elektronischen Sucherblock ausbauen: (1)
- Kamera/Aus/Videorecorder- & Zoom-Schalter ausbauen: (2)-(3)
- Handgurt & rechtes Gehäuse ausbauen: (2)-(3)-(4)-(5)

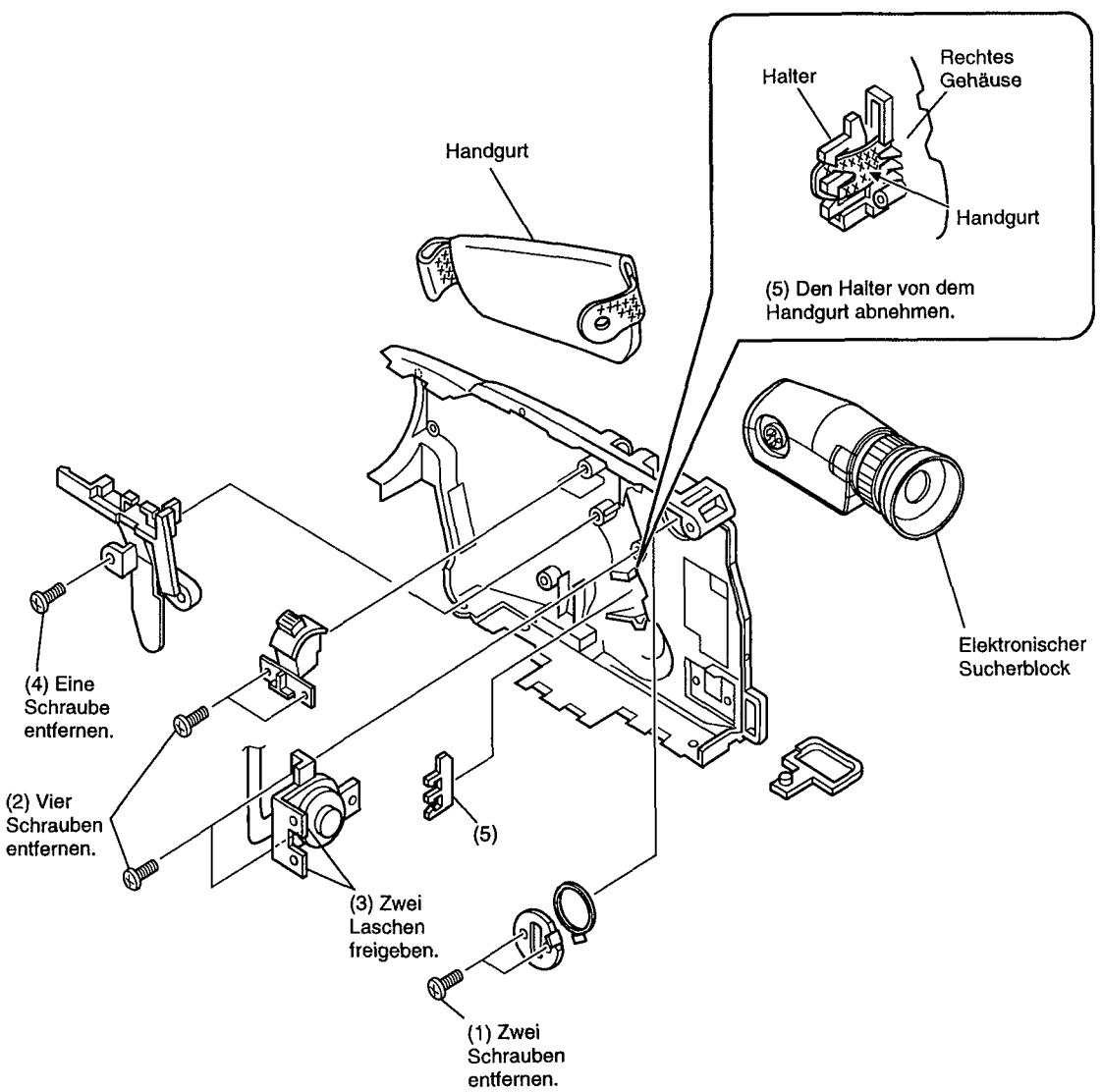


Abb. 3-2

3.3 Hauptblock, Kamerablock, hinteres Gehäuse, Mikrofon, IR-Filter, linker Gehäuseblock (Abb. 3-3)

<VORSICHT>

1) Die abdeckungen der AV-Ausgangsbuchsen an der Rückseite öffnen, bevor das hintere Gehäuse entfernt wird.

<VORGANG>

- Hauptblock & Kamerablock ausbauen:
  (1)-(2)-(3)-(4)-(5)-(6)-(7)-(8)-(9)
- Hinteres Gehäuse ausbauen:
  (1)-(2)-(3)-(4)-(5)-(6)-(7)-(8)-(9)-(10)-(11)
- Mikrofon, IR-Filter & linken Gehäuseblock ausbauen:
  (1)-(2)-(3)-(4)-(5)-(6)-(7)-(8)-(9)-(12)-(13)-(14)-(15)

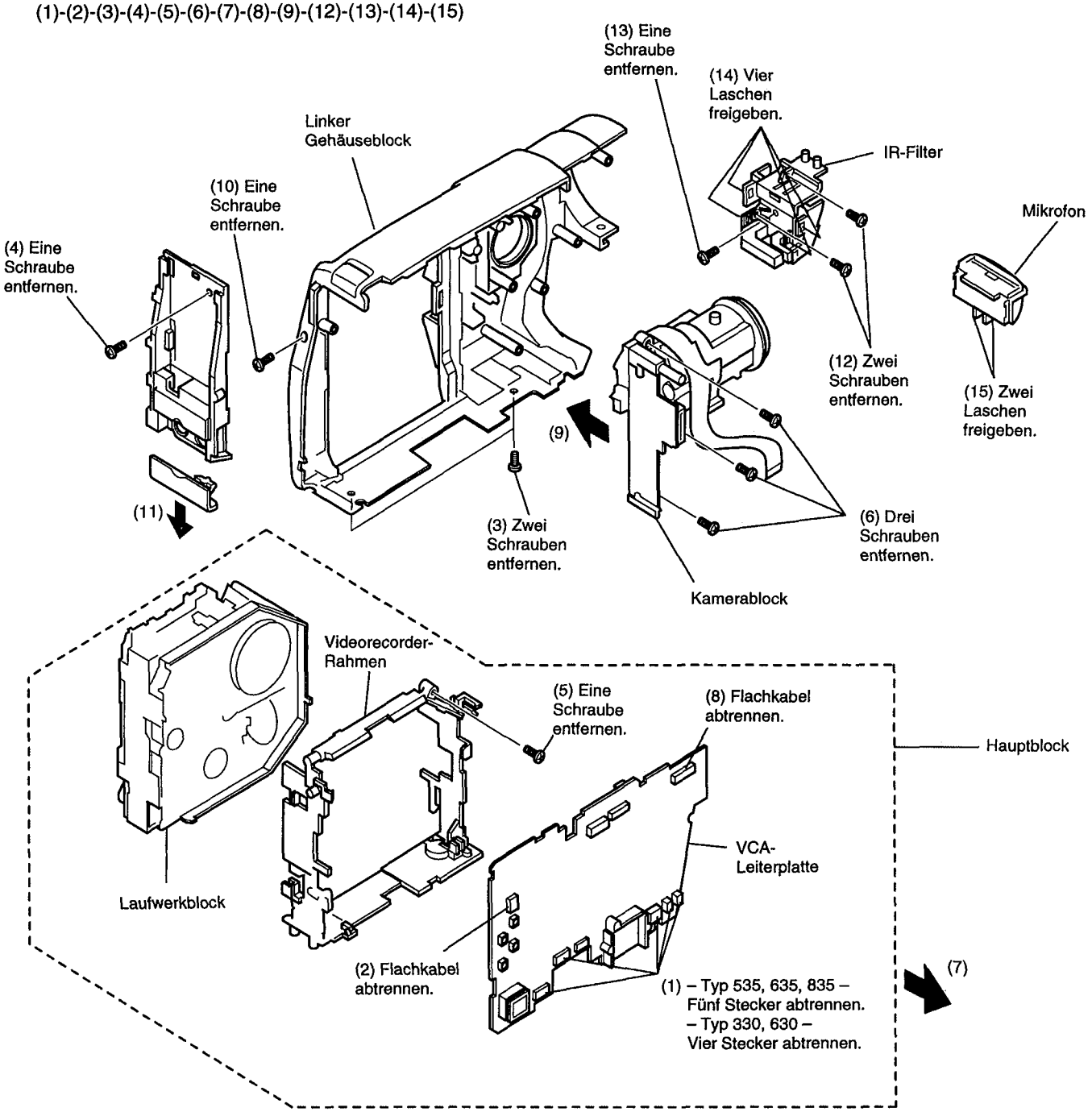


Abb. 3-3

3.4 VCA-Leiterplatte, Videorecorder-Rahmen, Laufwerkblock (Abb. 3-4)

<VORGANG>

- VCA-Leiterplatte ausbauen:
  (1)-(2)-(3)-(4)-(5)
- Videorecorder-Rahmen & Laufwerkblock ausbauen:
  (1)-(2)-(3)-(4)-(5)-(6)-(7)

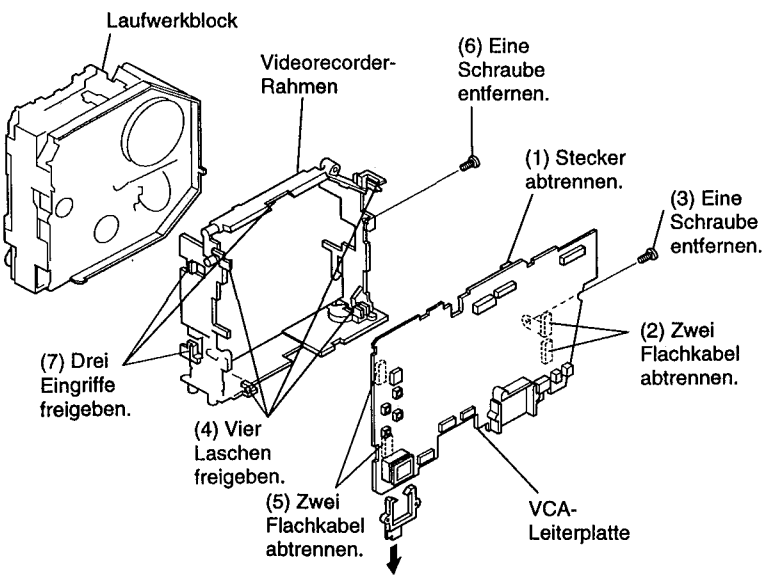


Abb. 3-4

3.5 Objektivblock, SE-Leiterplatte, CCD-Bildsensor (Abb. 3-5)

<VORSICHT>

1) Wenn der Objektivblock abgenommen wird, lösen sich das Kristallfilter und den Sensorgummi von selbst. Darauf achten, daß das Kristallfilter nicht beschädigt wird.
2) Den Objektivblock nicht zerlegen. Anderenfalls arbeitet der Video-Kamerarecorder nicht normal.

<VORGANG>

- Objektivblock ausbauen:
  (1)-(2)-(3)
- SE-Leiterplatte & CCD-Bildsensor ausbauen:
  (1)-(2)-(3)-(4)-(5)

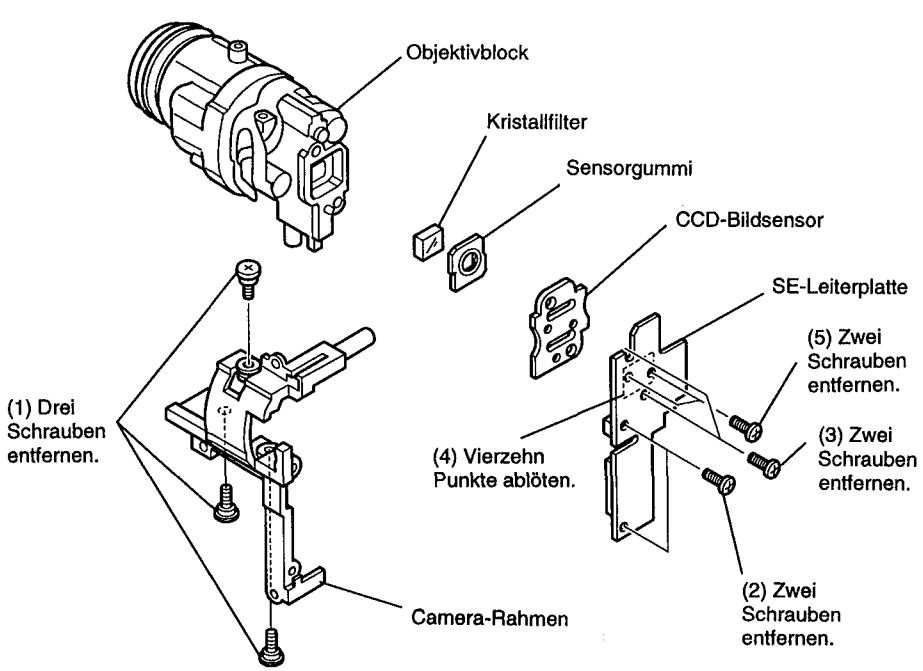


Abb. 3-5

3.6 Unteres LCD-Gehäuse, LCD-Block [Für Typ 535, 635, 835] (Abb. 3-6)

<VORSICHT>

1) Darauf achten, daß der LCD-Bildschirm nicht beschädigt oder verschmiert wird. (Falls Schmutz anhaftet, mit einem weichen Tuch abwischen.)
2) Die LCD-Tafel, die Lichtfolie und die Hintergrundleuchte mit besonderer Vorsicht behandeln.

<VORGANG>

- Unteres LCD-Gehäuse ausbauen:
  (1)-(2)-(3)-(4)
- LCD-Block ausbauen:
  (1)-(2)-(3)-(4)-(5)

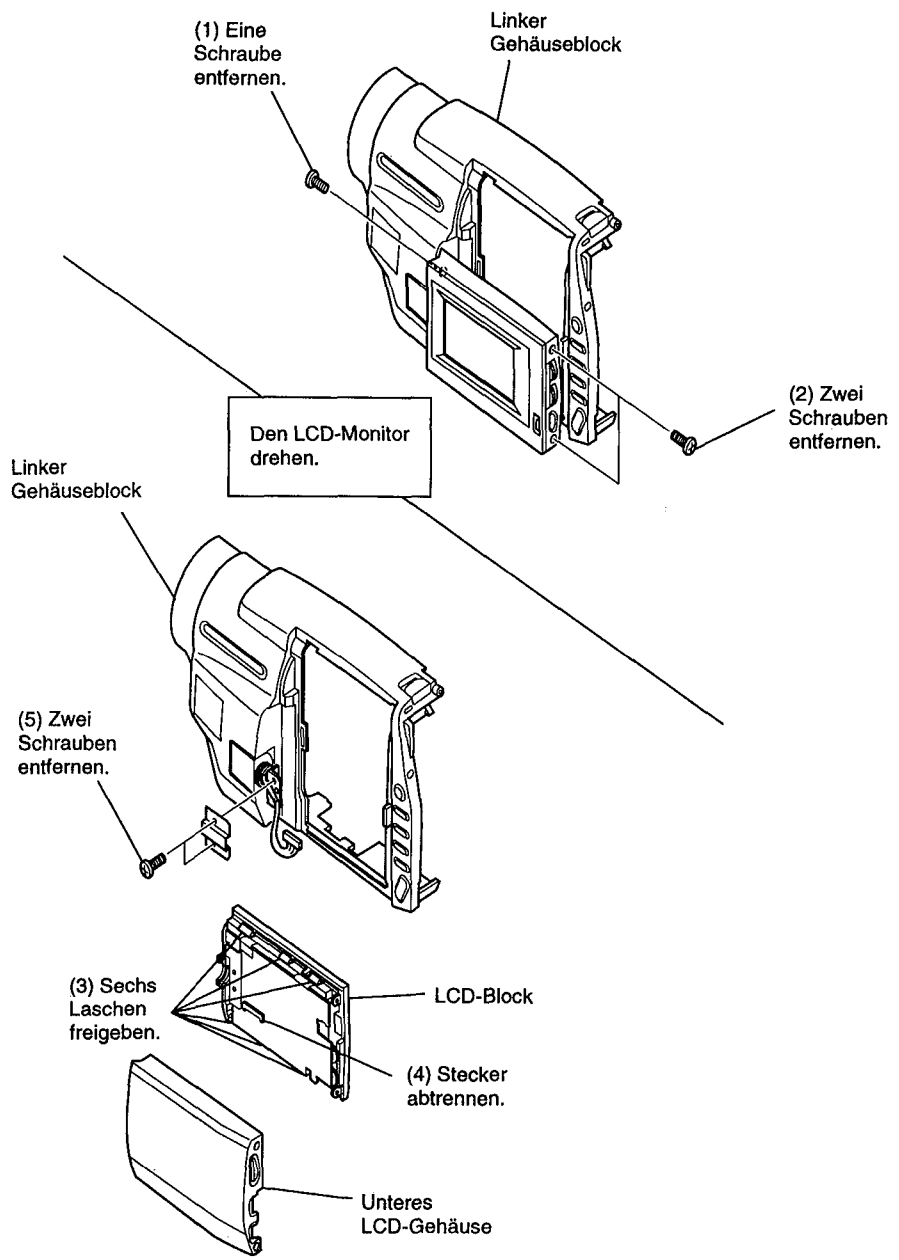


Abb. 3-6

3.7 Lautsprecher, LCD-Öffnungs/Schließschalter, LCD-Anschlag [Für Typ 535, 635, 835] (Abb. 3-7)

<VORSICHT>

1) Darauf achten, daß der LCD-Bildschirm nicht beschädigt oder verschmiert wird. (Falls Schmutz anhaftet, mit einem weichen Tuch abwischen.)
2) Die LCD-Tafel, die Lichtfolie und die Hintergrundleuchte mit besonderer Vorsicht behandeln.

<VORGANG>

- Lautsprecher ausbauen:
  (1)-(2)
- LCD-Öffnungs/Schließschalter ausbauen:
  (1)-(3)-(4)
- LCD-Anschlag ausbauen:
  (1)-(3)-(5)-(6)-(7)

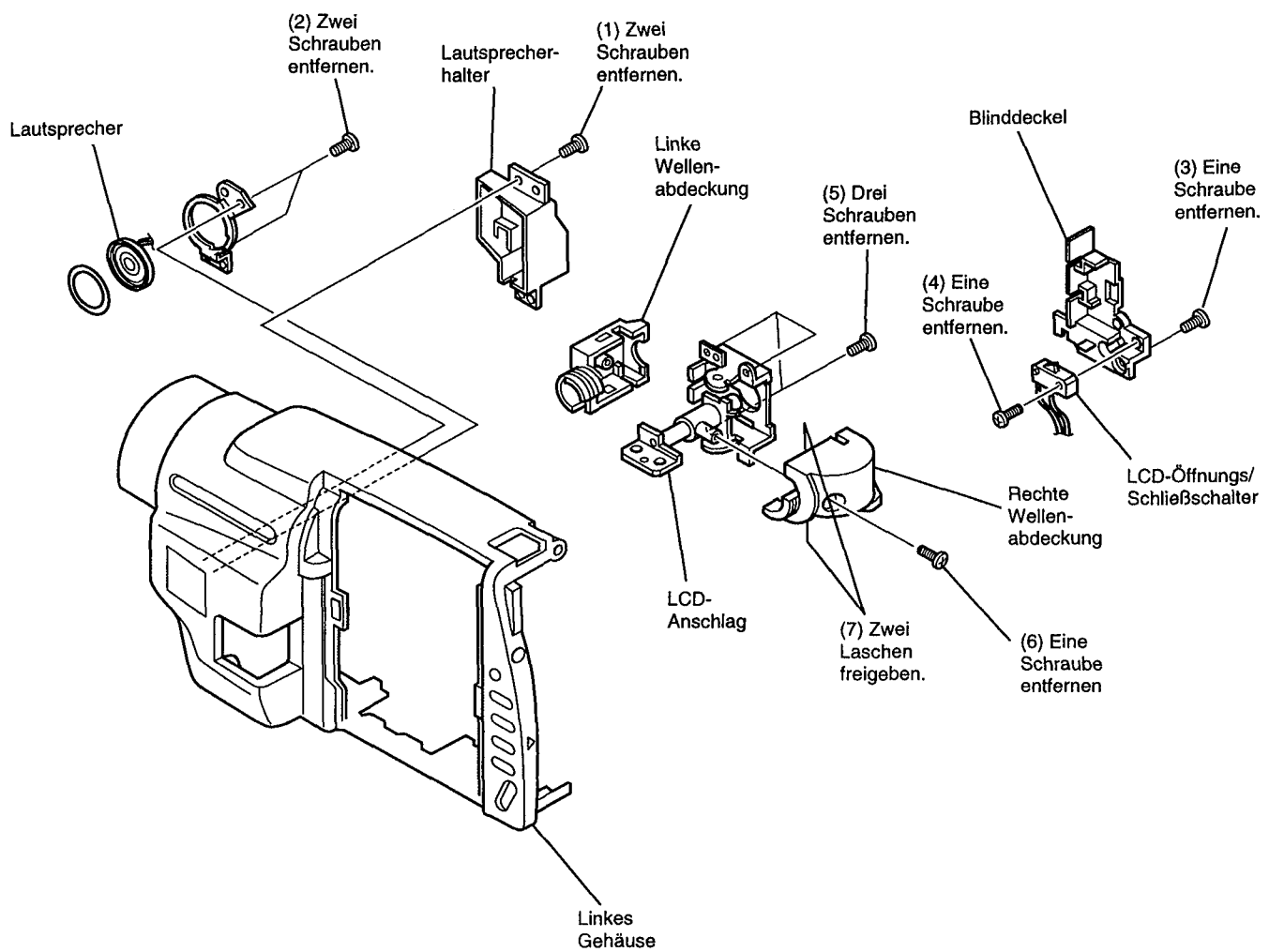


Abb. 3-7

3.8 Oberes LCD-Gehäuse, LCD-Leiterplatte, Hintergrundleuchte, LCD-Tafel [Für Typ 535, 635, 835] (Abb. 3-8)

<VORSICHT>

1) Darauf achten, daß der LCD-Bildschirm nicht beschädigt oder verschmiert wird. (Falls Schmutz anhaftet, mit einem weichen Tuch abwischen.)
2) Die LCD-Tafel, die Lichtfolie und die Hintergrundleuchte mit besonderer Vorsicht behandeln.

<VORGANG>

- Oberes LCD-Gehäuse ausbauen:
  (1)
- LCD-Leiterplatte ausbauen:
  (1)-(2)-(3)
- Hintergrundleuchte & LCD-Tafel ausbauen:
  (1)-(2)-(3)-(4)

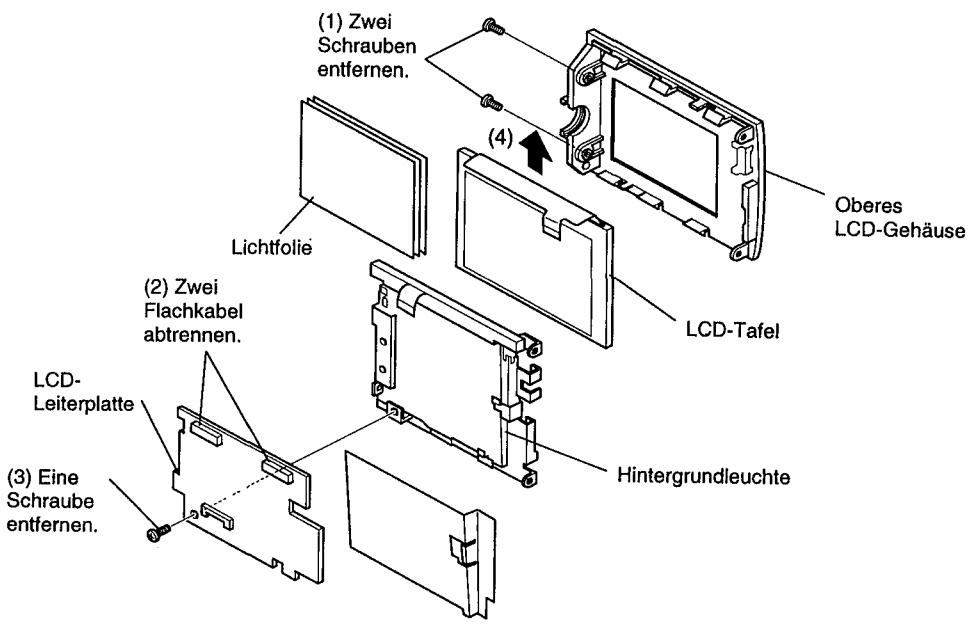


Abb. 3-8

3.9 Elektronischer Sucher des CRT-Typs (Abb. 3-9)

<VORSICHT>

1) Darauf achten, daß die CRT (Kathodenstrahlröhre) keinen Stößen ausgesetzt wird.

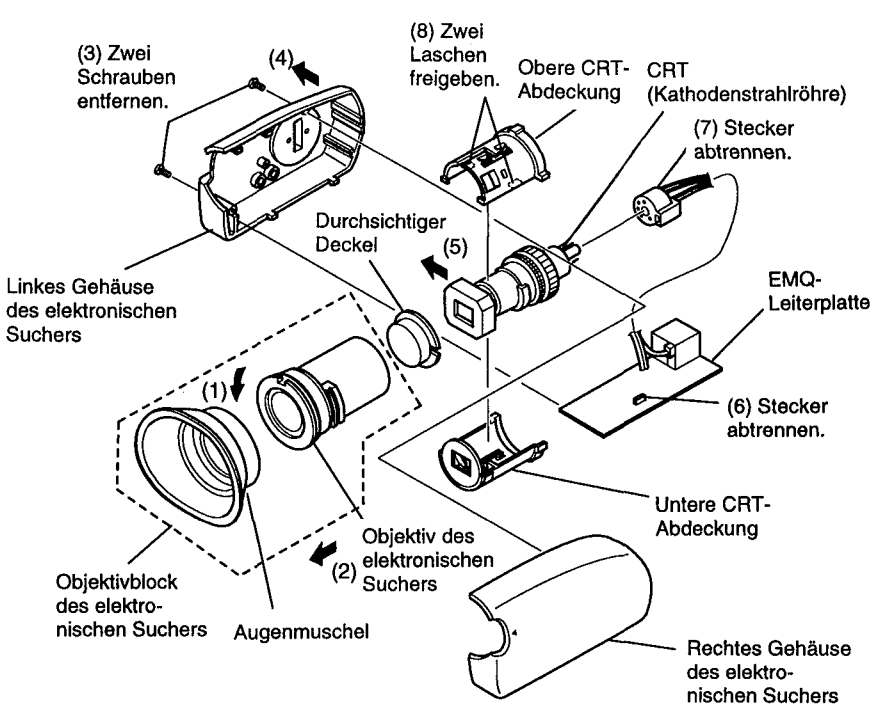
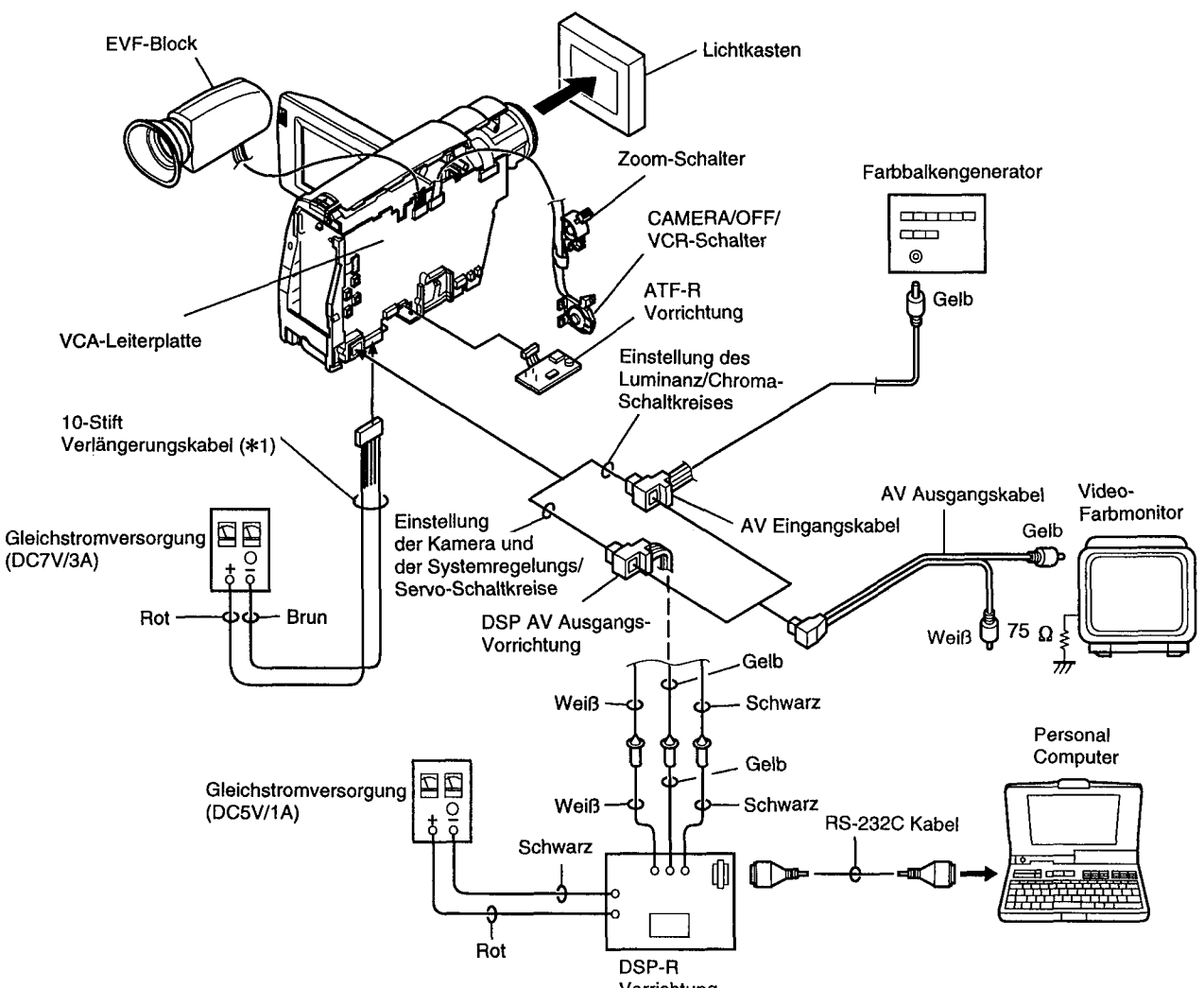


Abb. 3-9

Abkürzungen
MAP ... Digitales Einstellprogramm für die Kamera
DSP ... Digital-Signal-Prozessor

1. Anschluß für die Einstellung

- Die meisen Einstellpunkte können ohne Zerlegung des Kamerarecorders ausgeführt werden.
- Der elektronische Sucher (EVF) muß angeschlossen sein, um den Betriebsmodus in der Monitoranzeige anzuzeigen.



(*1) 10-Stift Verlängerungskabel (Teile Nr. 7069183)
- Stifte 1 und 2: Positiv (Rot), Stifte 6 und 7: Negativ (Brun).
- Falls das Kabel für die Einstellung des Stromversorgungs-Abschaltpegels verwendet wird, die Stifte 3 und 5 mit Stift 6 oder Stift 7 (Erdung) kurzschließen.

Abb. 1-1

2. Einstellung des Kameraabschnitts

2.1 Anordnung der Leiterplatten

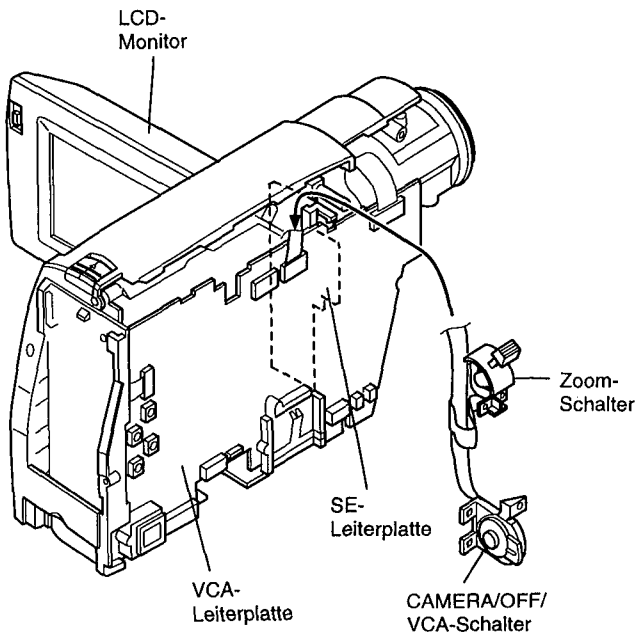


Abb. 2-1

2.2 Prüfeinrichtung und Diagramme erforderlich für die Einstellung

Prüfeinrichtung

- Oszilloskop (Doppel-Spur) [und Vektorskop]
- Digital-Voltmeter (DVM)
- Frequenzzähler
- Video-Farbmonitor

Diagramme usw.

- Diskette für Einstellung
- Personal Computer
- Personal Computer 9-Stift oder 25-Stift (RS-232C) Kabel
- DSP-R Vorrichtung
- DSP AV-Ausgangskabel
- Lichtkasten (3100°K)
- Grauwertdiagramm
- Farbbalkendiagramm
- Auflösungsdiagramm
- Rückfokus-Einstelldiagramm
- Lichtbalancefilter C12
- Gleichstromversorgung (DC7V/3A)
- Gleichstromversorgung (DC5V/1A)

2.3 Einstellbedingungen

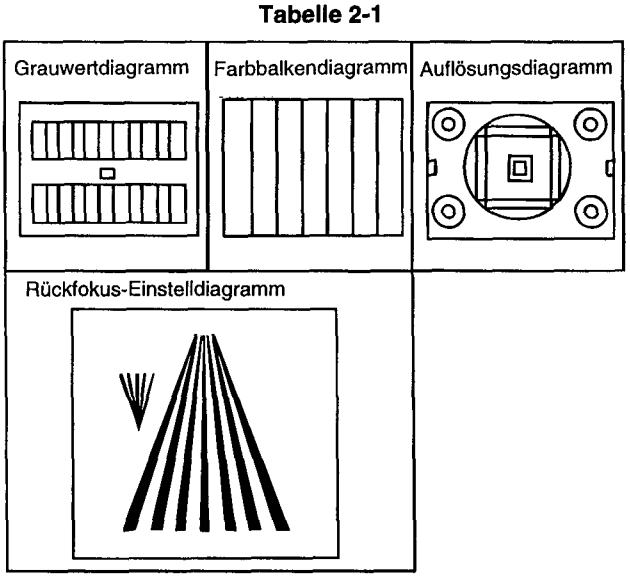
1) Darauf achten, daß der Videorecorderabschnitt richtig eingestellt wurde, bevor der Kameraabschnitt eingestellt wird.
2) Einen Lichtkasten mit minimalem Flimmern verwenden. Die Farbtemperatur des Lichtkastens genau steuern.
3) Diese Einheit, eine Stromversorgung und einen Video-Farbmonitor gemäß Abb. 1-1 anschließen.
4) Wenn der Video-Ausgang (AV OUT) für die Ausführung von Einstellungen verwendet wird, unbedingt die AV OUT Buchse mit 75 Ohm abschließen.
5) Das Diagramm (Lichtkasten) etwa 30 cm entfernt von der Kamera (Objektiv-Oberfläche) aufstellen, wenn nicht anders vorgeschrieben.
6) Die Kamera auf das Diagramm richten, um die Video-Periode auszufüllen, wenn nicht anders vorgeschrieben.
7) Die 10:1 Sonde des Oszilloskops verwenden, wenn nicht anders vorgeschrieben.
8) Wenn "Oszilloskop intern triggern" vorgeschrieben ist, die Zeitbasis des Oszilloskops auf 10 µs/Teilung einstellen.

2.4 Voreingestellte Positionen der Schalter und Regler während der Einstellung

- CAMERA/OFF/VIDEO Schalter ..... Position "CAMERA"
- INST. ZOOM ..... Nicht Display-Modus
- DATE ..... Nicht Display-Modus
- DISPLAY ..... Nicht Display-Modus
- TITLE ..... Nicht Display-Modus
- FOCUS ..... Automatische Scharfeinstellung
- E.I.S ..... OFF-Modus
- 16 x 9 ..... OFF-Modus
- FADE ..... OFF-Modus

2.5 Liste der Diagramme für die Kamera-Einstellung

Tabelle 2-1



2.6 Nach dem Austauschen von wichtigen Komponenten in dem Kamera-Abschnitt prüfen.

Nach dem Austauschen von wichtigen Komponenten, die in der nachfolgenden Tabelle aufgeführten Prüfungen ausführen. Die nachfolgende Tabelle zeigt die mindestens erforderlichen Einstellungen nach dem Austausch von wichtigen Komponenten. Die nachfolgende Tabelle trifft vielleicht nicht zu, wenn mehrere Komponenten in Abhängigkeit von dem Symptom des Defekts ausgetauscht wurden.

Vorsicht: Wenn der EEP ROM der VCA-Leiterplatte ausgetauscht wird, den EEP ROM initialisieren, wie es in "2.7.3 Anfängliche Einstellung nach Modell" beschrieben ist, und danach alle Einstellungen des Kameraabschnitts und der Systemregelungs/Servo-Schaltkreise ausführen.

	Name der Einstellung	Name der wichtigen Komponenten									
		SE-Leiter-platte	VCA-Leiter-platte	IC 1001	IC 1102	IC 1104	IC 1105	IC 1201	IC1401 IC1402	IC 1403	Objektiv-block
—	Anfängliche Einstellung nach Modell		●				●				
Einstellvorgang für elektrischen Pegel											
(1)	CDS-Abtastimpulsabgleich		●		●		●				
Digital-Einstellvorgang											
(1)	Einstellung der automatischen Blendenregelung	●	●	●		●	●	●			●
(2)	Matrix-Einstellung	●	●	●			●				
(3)	Weißbalance-Einstellung	●	●	●			●				
(4)	Chromagewinn-Einstellung	●	●	●			●				
Einstellvorgang für Autofokus											
(1)	Einstellung der Zoom-Nachführung	●	●	●			●				●
(2)	Einstellung des AF-Rauschpegels	●	●	●			●				●
Stabilisator-Abgleichvorgang											
(1)	Stabilisator-Abgleich	●	●				●		●	●	
Punktrauschen-Abgleichvorgang											
(1)	Punktrauschen-Abgleich		●	●			●				

2.7 Einstellvorgang für Kameraabschnitt

Hinweise

1. Um die Einstellung zu beenden, die ESC (Escape) Taste zweimal drücken, um die MS-DOS Anzeige zu erhalten, und danach den Video-Kamerarecorder und die Vorrichtungen ausschalten.
2. Nachfolgend ist ein Beispiel für die Anweisungen des Personal Computers und der Menü-Anzeige beschrieben; diese unterscheiden sich in Abhängigkeit von Hersteller und Modell des Personal Computers. Siehe die Bedienungsanleitung des Personal Computers.
3. Falls eine Fehlermeldung auf dem Display des Computers erscheint, siehe Abschnitt "4. Fehlermeldungen". Falls nach dem Erscheinen einer Fehlermeldung eine Taste gedrückt wird, kehrt das Display des Computers auf das Einstellmenü zurück.

2.7.1 Anschlüsse für die Einstellung

Den Video-Kamerarecorder, die DSP-R Vorrichtung, den Personal Computer, die Stromversorgung usw. gemäß Abb. 1-1 anschließen.
Darauf achten, daß der Video-Kamerarecorder eingeschaltet ist.

2.7.2 Starten des Einstellprogramms (MAP)

<Vorgang>

1) Den Personal Computer einschalten und das MS-DOS System starten (Abb. 2-2).
2) Die Diskette für die Einstellung in das Diskettenlaufwerk B einsetzen und die Tasten **B :** gefolgt von [ENTER] drücken. (Abb. 2-3)

* Falls die Diskette für die Einstellung in das Diskettenlaufwerk A eingesetzt ist, die Tasten **A :** gefolgt von [ENTER] drücken.

3) Die Tasten **M A P _ I B M** [Leerstelle] **1** gefolgt von [ENTER] drücken. Das Digital-Einstellprogramm (MAP: Manual Adjustment Program) startet und die in Abb. 2-6 gezeigte MODELLWAHL (MODEL SELECT) erscheint auf dem Bildschirm.

> Wenn Sie einen Personal Computer mit zwei seriellen Schnittstellen-Steckverbindern verwenden und die DSP-Vorrichtung an den seriellen Schnittstellen-Steckverbinder 2 anschließen, MAP_IBM 2 drücken.

4) Die dem Modell entsprechende Nummer wählen. Falls [ESC] (Escape) gedrückt wird, erscheint wiederum die Anzeige vor dem Start des MAP-Programms (MS-DOS).
5) Die **Y**-Taste drücken (Abb. 2-7).
   Falls die **N**-Taste gedrückt wird, kehrt die Anzeige des Computers auf das Modellwahlmenü (MODEL SELECT MENU) zurück.

Hinweise

1: Falls Sie das falsche Modell spezifizieren, die [ESC] (Escape) Taste drücken, um wiederum die MODELLWAHL-Anzeige zu erhalten, und danach das richtige Modell spezifizieren.
2: Falls Sie fälschlicherweise eine Nummer ohne Modellbezeichnung wählen, erscheint die in Abb. 2-9 gezeigte Meldung auf dem Bildschirm des Computers. Eine beliebige Taste drücken, um auf die Anzeige in Abb. 2-6 (MODELLWAHL) zurückzukehren.
3: Falls es mehr als 5 Modelle gibt und die **P**-Taste gedrückt wird, ändert die Anzeige des Computers auf die nächste Seite.

MELDUNG BEI FEHLERHAFTER BEDIENUNG

```
Can not find the DATA FILE
**** PRESS ANY KEY ****
```

Abb. 2-9

```
C>
```

Abb. 2-2

Diskette für Einstellung in Diskettenlaufwerk B einsetzen.

Die Tasten **A :** [ENTER] drücken.

```
C>A:
A>
```

Abb. 2-3

Die Tasten **M A P _ I B M** [Leerstelle] **1** [ENTER] drücken.

```
C>
A>MAP_IBM 1
```

Abb. 2-4

```
Manual adjustment program for service station
Copyright (C) Hitachi LTD
```

Abb. 2-5

```
**************************************************
                MODEL SELECT
**************************************************
          [1]    xxxxxxx
          [2]    xxxxxxx
          [3]    xxxxxxx
          [4]    xxxxxxx
          [5]    xxxxxxx
          [P]    NEXT SELECTION
          [ESC]  END
      Please select the type of the set.
      Press [1] - [5] or [P] or [ESC]
```

Abb. 2-6

Zifferntaste drücken.

```
Selected model is x x x x x x x
Are you sure ? (Y/N)
```

Abb. 2-7

Die **Y**-Taste drücken.

HAUPTMENÜ

```
**************************************************
          MANUAL ADJUSTMENT PROGRAM
**************************************************
          [A]    DATA INITIALIZE
          [B]    ELECTRIC VOLUME
          [C]    ADJUSTMENT
          [D]    VCR ADJUSTMENT
          [E]    AUTO FOCUS
          [F]    EIS
          [G]    SPOT NOISE
          [ESC]  END
      Please select [A] - [G] or [ESC]
```

Abb. 2-8

2.7.3 Anfängliche Einstellung nach Modell

Vor Beginn der Einstellung

1) Dieser Abschnitt beschreibt, wie der EEP ROM initialisiert wird. Unbedingt diesen Abschnitt ausführen, nachdem der EEP ROM auf der VCA-Leiterplatte ausgetauscht wurde. Wenn andere Komponenten ausgetauscht werden, muß der EEP ROM normalerweise nicht initialisiert werden. Die [ESC] (Escape) Taste drücken, um die Anzeige des Computers auf das HAUPTMENÜ zurückzustellen.
2) Unbedingt die nachfolgenden Einstellungen ausführen, nachdem die anfängliche Einstellung beendet ist.
   - 2.7.4 Einstellvorgang für elektrischen Pegel
   - 2.7.5 Digital-Einstellvorgang
   - 2.7.6 Autofokus-Einstellvorgang
   - 2.7.7 Stabilisator-Abgleichvorgang
   - 2.7.8 Punktrauschen-Abgleichsvorgang
   - 2.9 Einstellung des elektronischen Farb-LCD-Suchers
   - 3.7 Einstellung der Systemregelungs/ Servo-Schaltkreise

<Vorgang>

1) Das MAP starten.
2) Die **A**-Taste drücken, um INITIALIZE zu wählen (Abb. 2-10, 2-11).
3) Die **Y**-Taste drücken, um zu starten (Abb. 2-11, 2-12).

   Die **N**-Taste drücken, um auf das HAUPTMENÜ zurückzukehren (Abb. 2-11).

4) Falls der Video-Kamerarecorder keine abnormalen Bedingungen aufweist, wird die in Abb. 2-12 gezeigte Meldung für eine Weile auf dem Bildschirm des Computers angezeigt, worauf die Meldung angezeigt wird, daß die anfängliche Einstellung beendet ist (siehe Abb. 2-13).
5) Falls die in Abb. 2-13 aufgeführte Meldung auf dem Display des Computers erscheint, eine beliebige Taste drücken. Das Display des Computers kehrt auf die in Abb. 2-10 gezeigte Anzeige (HAUPTMENÜ) zurück.

HAUPTMENÜ

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
        Please select [A] - [G] or [ESC]
```

Abb. 2-10

Die **A**-Taste drücken.

```
« DATA WRITING »
START TO SEND DATA.  (Y/N)
```

Abb. 2-11

Die **Y**-Taste drücken.

```
« DATA WRITING »
PLEASE WAIT A MOMENT.
```

Abb. 2-12

```
« DATA WRITING »
PLEASE WAIT A MOMENT.
FINISHED WRITING DATA.
PRESS ANY KEY.
```

Abb. 2-13

Eine beliebige Taste drücken, um auf Abb. 2-10 zurückzukehren.

2.7.4 Einstellvorgang für elektrischen Pegel

Vor Beginn der Einstellung
Wenn der EEP ROM oder die VCA-Leiterplatte ausgetauscht wurde, den EEP ROM initialisieren. Siehe Abschnitt "2.7.3 Anfängliche Einstellung nach Modell" und danach alle elektrischen Pegel einstellen.

<Vorgang>
1) Das MAP starten.
2) Die **B**-Taste drücken, um ELECTRIC VOLUME zu wählen (Abb. 2-14, 2-15).
3) Die Nummer der erforderlichen Einstellung wählen.

Hinweise
1) Falls die [ESC] (Escape) Taste gedrückt wird, kehrt das Display des Computers auf Abb. 2-14 (HAUPTMENÜ) zurück.
2) Um die Einstellung zu beenden, die [ESC] (Escape) Taste zweimal drücken, um wiederum die MS-DOS Anzeige zu erhalten, und danach den Video-Kamerarecorder und die Vorrichtung ausschalten.

HAUPTMENÜ

```
**************************************************
          MANUAL ADJUSTMENT PROGRAM
**************************************************
          [A]    DATA INITIALIZE
          [B]    ELECTRIC VOLUME
          [C]    ADJUSTMENT
          [D]    VCR ADJUSTMENT
          [E]    AUTO FOCUS
          [F]    EIS
          [G]    SPOT NOISE
          [ESC]  END
          Please select [A] - [G] or [ESC]
```

Abb. 2-14

Die **B**-Taste drücken.

MENÜ FÜR EINSTELLUNG DER ELEKTRISCHEN PEGEL

```
**************************************************
          ELECTRIC VOLUME
**************************************************
          [1]    CDS SAMPLING PULSE
          [ESC]  RETURN TO MAIN MENU
          Please select [1] or [ESC]
```

Abb. 2-15

(1) CDS-Abtastimpulsabgleich

Zweck	• Um Rauschen in dem CCD-Bildsensor-Ausgangssignal zu unterdrücken und den Signal- pegel zu maximieren.
Problem bei unvollkommener Einstellung	• Diagonalschwebungen und horizontales Rauschen treten auf.
Bedingung	• Den Video-Kamerarecorder nach dem Einschalten für mindestens 2 Minuten ruhen lassen, bis sich die Schaltkreise stabilisiert haben, bevor mit dem Abgleich begonnen wird.

<Vorgang>

MENÜ FÜR EINSTELLUNG DER ELEKTRISCHEN PEGEL

```
**************************************************
          ELECTRIC VOLUME
**************************************************
          [1]    CDS SAMPLING PULSE
          [ESC]  RETURN TO MAIN MENU
          Please select [1] or [ESC]
```

Die **1**-Taste drücken, um den CDS-Abtastimpuls zu wählen.

```
« ADJUSTMENT OF CDS SAMPLING PULSE »
« NOW ADJUSTING »
```

```
« ADJUSTMENT OF CDS SAMPLING PULSE »
FINISHED WRITING DATA.
ADJUSTMENT COMPLETED.
PRESS ANY KEY.
```

Eine beliebige Taste drücken, um an das MENÜ FÜR EINSTELLUNG DER zurückzukehren.

2.7.5 Digital-Einstellvorgang

Vor Beginn der Einstellung
Wenn der EEP ROM oder die VCA-Leiterplatte ausgetauscht wurde, den EEP ROM gemäß "2.7.3. Anfängliche Einstellung nach Modell" initialisieren und danach alle Digital-Einstellungen ausführen.

Hinweis
Falls ein alter Lichtkasten verwendet wird, kann diese Einstellung vielleicht nicht ausgeführt werden. Verwenden Sie den folgenden Vorgang, um die Einstellung ohne Lichtkasten auszuführen.

- Ein weißes Blatt Papier mit einer geeigneten Lichtquelle von 2.000 bis 2.500 Lux (eine Halogenlampe mit 3.200 K) beleuchten.
- Den Kamerarecorder auf das beleuchtete weiße Blatt Papier richten, so daß der Bildschirm möglichst ausgefüllt ist (bei Weitwinkel).
- Die Entfernung zwischen dem Kamerarecorder und dem Weißen Blatt Papier so einstellen, daß keine Fehlermeldung erscheint.

Vorgang
1) Das MAP starten.
2) Die **C**-Taste drücken, um ADJUSTMENT (Einstellung) zu wählen (siehe Abb. 2-16, 2-17)
3) Die Nummer der erforderlichen Einstellung wählen.

Hinweise
1. Falls die [ESC] (Escape) Taste gedrückt wird, kehrt das Display des Computers auf Abb. 2-16 (HAUPTMENÜ) zurück.
2. Um die Einstellung zu beenden, die [ESC] (Escape) Taste zweimal drücken, um die MS-DOS Anzeige wieder herzustellen, und danach den Video-Kamerarecorder und die Vorrichtung ausschalten.

HAUPTMENÜ

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
        Please select [A] - [G] or [ESC]
```

Abb. 2-16

Die **C**-Taste drücken.

EINSTELLMENÜ

```
**************************************************
                ADJUSTMENT
**************************************************
        [1]     AUTO IRIS CONTROL
        [2]     MATRIX
        [3]     WHITE BALANCE
        [4]     CHROMA GAIN
        [ESC]   RETURN TO MAIN MENU
        Please select [1]- [4] or [ESC]
```

Abb. 2-17

(1) Einstellung der automatischen Blendenregelung

Zweck	• Einstellen den Blendensteuer-daten.
Problem bei unvollkommener Einstellung	• Das Bild wird zu hell. • Das Bild wird zu dunkel.
Bedingung	• Die Kamera auf den Lichtkasten ohne Diagramm richten, so daß der Bildschirm ausgefüllt ist (bei Weitwinkel).

<Vorgang>

EINSTELLMENÜ

```
**************************************************
                  ADJUSTMENT
**************************************************
        [1]    AUTO IRIS CONTROL
        [2]    MATRIX
        [3]    WHITE BALANCE
        [4]    CHROMA GAIN
        [ESC]  RETURN TO MAIN MENU
          Please select [1]- [4] or [ESC]
```

Die 1-Taste drücken, um AUTO IRIS CONTROL (automatische Blendenregelung) zu wählen.

```
« ADJUSTMENT OF IRIS OPEN & CLOSE »
    PLEASE WAIT AROUND 10 SEC.
```

```
« ADJUSTMENT OF IRIS OPEN & CLOSE »
    PLEASE WAIT AROUND 10 SEC.
  DATA WRITEN INTO EEPROM
  ADJUSTMENT FINISHED
    PRESS ANY KEY
```

Eine beliebige Taste drücken, und das Display ändert wie folgt.

```
« ADJUSTMENT IRIS »
  PLEASE WAIT AROUND 20 SEC.
```

*1

```
« ADJUSTMENT IRIS »
  PLEASE WAIT AROUND 20 SEC.
ROUGH ADJUSTMENT     : × × TIMES
FINE ADJUSTMENT      : × × TIMES
  ADJUSTMENT FINISHED
    PRESS ANY KEY
```

Eine beliebige Taste drücken, und das Display ändert wie folgt.

```
« ADJUSTMENT OF HALLCURVE »
  PLEASE WAIT AROUND 30 SEC.
```

*2

```
« ADJUSTMENT OF HALLCURVE »
  PLEASE WAIT AROUND 30 SEC.
                *
ADJUSTMENT POINT 0 1 2 3 4 5 6 7 8 9 A B C
```

```
« ADJUSTMENT OF HALLCURVE »
  PLEASE WAIT AROUND 30 SEC.
                * * *** ******* * * *
ADJUSTMENT POINT 0 1 2 3 4 5 6 7 8 9 A B C
  DATA WRITEN INTO EEPROM
  ADJUSTMENT FINISHED
    PRESS ANY KEY
```

Eine beliebige Taste drücken, und das Display ändert wie folgt.

```
  ADJUSTMENT FINISHED
    PRESS ANY KEY
```

Eine beliebige Taste drücken, um auf das EINSTELLMENÜ zurückzukehren.

Die Stromversorgung für 5 Sekunden aus- und danach wieder einschalten.

Hinweise

1. Bei manchen Einheiten wird der folgende Parameter in dem mit *1 markierten Display nicht angezeigt. Dies ist jedoch normal; daher mit der Einstellung fortsetzen.
   Grobeinstellung : XX-mal
2. Die Markierung * blinkt aufeinanderfolgend über den Ziffern und Buchstaben in dem mit *2 markierten Display.

(2) Matrix-Einstellung (Abb. 2-18)

Zweck	Kompensierung für Ungleichmäßkeiten des Chromasignals.
Problem bei unvollkommener Einstellung	Farbreproduktion wird fehlerhaft.
Prüfpunkt	• Video-Ausgang (AV OUT)
Ausrüstung/ Vorrichtung	• Oszilloskop
Bedingung	• Auf das Grauwertdiagramm richten.

<Vorgang>

EINSTELLMENÜ

```
**************************************************
                  ADJUSTMENT
**************************************************
        [1]     AUTO IRIS CONTROL
        [2]     MATRIX
        [3]     WHITE BALANCE
        [4]     CHROMA GAIN
        [ESC]   RETURN TO MAIN MENU
          Please select [1]- [4] or [ESC]
```

Die **2**-Taste drücken, um MATRIX (Matrix) zu wählen.

```
« ADJUSTMENT OF BLUE MATRIX »
        ROUGH ADJUSTMENT
[U]             UP
[D]             DOWN

        FINE ADJUSTMENT
[Ctrl] + [U]    UP
[Ctrl] + [D]    DOWN

[ENTER]         RETURN TO MENU
[ESC]           QUIT
```

Für Typ 330, 535:
Die **D**-Taste drücken, um den gelben Pegel zu minimieren. Die **U**-Taste drücken, so daß das Verhältnis zwischen dem gelben Pegel und dem blauen Pegel 1:2 beträgt.
Die [Ctrl] Taste drücken und niederhalten, und danach die **U**- und **D**-Tasten drücken, bis das Verhältnis zwischen dem gelben Pegel und dem blauen Pegel 1:2 beträgt.

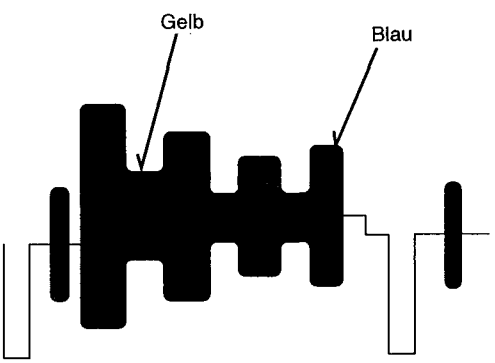
Für Typ 630, 635, 835:
Die **D**-Taste drücken, um den gelben Pegel zu minimieren. Die **U**-Taste drücken, so daß das Verhältnis zwischen dem gelben Pegel und dem blauen Pegel 2:5 beträgt.
Die [Ctrl] Taste drücken und niederhalten, und danach die **U**- und **D**-Tasten drücken, bis das Verhältnis zwischen dem gelben Pegel und dem blauen Pegel 2:5 beträgt.

Die [ENTER] Taste drücken, und das Display ändert wie folgt.

```
« ADJUSTMENT OF BLUE MATRIX »
DATA WRITING TO EEPROM
```

```
« ADJUSTMENT OF BLUE MATRIX »
ADJUSTMENT FINISHED
PRESS ANY KEY
```

Eine beliebige Taste drücken, um auf das EINSTELLMENÜ zurückzukehren.



	Gelb	:	Blau
Typ 330, 535	1	:	2
Typ 630, 635, 835	2	:	5

(200 mV/50 µs. Teilung)

Abb. 2-18

(3) Weißbalance-Einstellung

Zweck	Einstellen der Weißbalance unter der Farbtemperatur, die als Referenz für den automatischen Weißbalance-Schaltkreis verwendet wird.
Problem bei unvollkommener Einstellung	• Farbe des Objektes unterscheidet sich von der Farbe des Bildes. • Ein weißes Objekt wird nicht als weiß gesehen.
Prüfpunkt	• Video-Ausgang (AV OUT)
Bedingung	• Ein C12 Filter anbringen. • Auf ein Grauwertdiagramm richten (bei Weitwinkel).

<Vorgang>

EINSTELLMENÜ

```
**************************************************
                  ADJUSTMENT
**************************************************
        [1]     AUTO IRIS CONTROL
        [2]     MATRIX
        [3]     WHITE BALANCE
        [4]     CHROMA GAIN
        [ESC]   RETURN TO MAIN MENU
          Please select [1]- [4] or [ESC]
```

Die **3**-Taste drücken, um WHITE BALANCE (Weißbalance) zu wählen.

```
« WHITE BALANCE ADJUSTMENT »
INPUT DATA OF OFFSET  FOR R-B --> 00
```

Für Typ 330, 535:
Die **1**- und **3**-Tasten drücken, um die Daten einzugeben.

Für Typ 630, 635, 835:
Die **1**- und **6**-Tasten drücken, um die Daten einzugeben.

Die [ENTER] Taste drücken, und das Display ändert wie folgt.

```
« WHITE BALANCE ADJUSTMENT »
INPUT DATA OF OFFSET  FOR Mg-G --> 00
```

Für Typ 330, 535:
Die **1**- und **0** (Zero)-Tasten drücken, um die Daten einzugeben.

Für Typ 630, 635, 835:
Die **1**- und **6**-Tasten drücken, um die Daten einzugeben.

Die [ENTER] Taste drücken, und das Display ändert wie folgt.

```
« WHITE BALANCE ADJUSTMENT »
PLEASE WAIT A MOMENT.
```

```
« WHITE BALANCE ADJUSTMENT »
ADJUSTMENT COMPLETED.
COMPLETED EEPROM WRITE.
PRESS ANY KEY.
```

Eine beliebige Taste drücken, um auf das EINSTELLMENÜ zurückzukehren.

(4) Chromagewinn-Einstellung (Abb. 2-19, 2-20)

Zweck	Einstellen der Farbsättigung unter der Referenz-Farbtemperatur.
Problem bei unvollkommener Einstellung	• Die Farbe des Bilder ist dichter als die des Objektes. • Die Farbe des Bildes ist leichter als die des Objektes.
Prüfpunkt	• Video-Ausgang (AV OUT)
Ausrüstung/ Vorrichtung	• Oszilloskop (Vektorskop)
Bedingung	• Ein C12 Filter anbringen. • Auf ein Farbbalkendiagramm richten.

<Vorgang>

EINSTELLMENÜ

```
**************************************************
                  ADJUSTMENT
**************************************************
        [1]     AUTO IRIS CONTROL
        [2]     MATRIX
        [3]     WHITE BALANCE
        [4]     CHROMA GAIN
        [ESC]   RETURN TO MAIN MENU
          Please select [1]- [4] or [ESC]
```

Die **4**-Taste drücken, um CHROMA GAIN (Chromagewinn) zu wählen.

```
« ADJUSTMENT OF CHROMA GAIN »
          ROUGH ADJUSTMENT
  [U]       CHROMA GAIN UP
  [D]       CHROMA GAIN DOWN

          FINE ADJUSTMENT
  [Ctrl] + [U]   CHROMA GAIN UP
  [Ctrl] + [D]   CHROMA GAIN DOWN

  [ENTER]   SAVE & RETURN TO MENU
  [ESC]     QUIT
```

Bei Verwendung des Oszilloskops

Die **U**- und **D**-Tasten drücken, um den Rotpegel auf etwa 450 mVs-s einzustellen.

Die [Ctrl] Taste drücken und niederhalten, und danach die **U**- und **D**-Tasten drücken, so daß der Rotpegel 450 mV ±20 mVs-s beträgt (Abb. 2-19)

Bei Verwendung des Vektorskops

Die **U**- und **D**-Tasten drücken, um den Rotvektor auf etwa 160% des Burstsignals einzustellen.

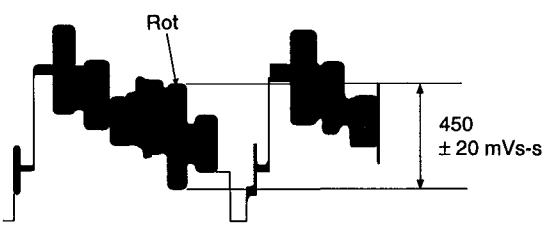
Die [Ctrl] Taste drücken und niederhalten, und danach die **U**- und **D**-Tasten drücken, so daß der Rotvektor 160% ±5% beträgt (Abb. 2-20)

Die [ENTER] Taste drücken, und das Display ändert wie folgt.

```
« ADJUSTMENT OF CHROMA GAIN »
DATA WRITING INTO EEPROM.
```

```
« ADJUSTMENT OF CHROMA GAIN »
ADJUSTMENT FINISHED.
PRESS ANY KEY.
```

Eine beliebige Taste drücken, um auf das EINSTELLMENÜ zurückzukehren.



(200mV/10µs.div)

Abb. 2-19

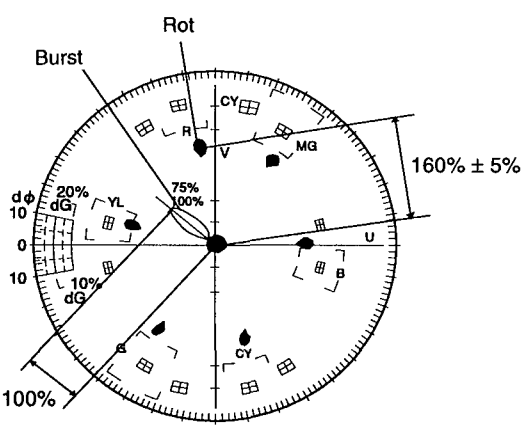


Abb. 2-20

2.7.6 Autofokus-Einstellvorgang

Vor Beginn der Einstellung
Unbedingt diese Einstellung ausführen, nachdem der Objektivblock, Teile des Autofokus-Schaltkreises und der VCA-Leiterplatte (EEPROM) ausgetauscht oder initialisiert wurden.

<Vorgang>
1) Das MAP starten.
2) Die **E**-Taste drücken, um AUTO FOCUS zu wählen (Abb. 2-21 und 2-22).
3) Die Nummer der erforderlichen Einstellung wählen.

Hinweise
1. Falls die [ESC] (Escape) Taste gedrückt wird, kehrt das Display des Computers auf Abb. 2-21 (HAUPTMENÜ) zurück.
2. Um die Einstellung zu beenden, die [ESC] (Escape) Taste zweimal drücken, um wiederum die MS-DOS Anzeige zu erhalten, und danach den Video-Kamerarecorder und die Vorrichtung ausschalten.

HAUPTMENÜ

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
          [A]    DATA INITIALIZE
          [B]    ELECTRIC VOLUME
          [C]    ADJUSTMENT
          [D]    VCR ADJUSTMENT
          [E]    AUTO FOCUS
          [F]    EIS
          [G]    SPOT NOISE
          [ESC]  END
          Please select [A] - [G] or [ESC]
```

Abb. 2-20

Die **E**-Taste drücken.

AUTOFOKUS-EINSTELLMENÜ

```
**************************************************
        AUTO FOCUS ADJUSTMENT
**************************************************
[1]    ADJUSTMENT OF ZOOM/FOCUS TRACKING
[2]    ADJUSTMENT OF AF NOISE LEVEL
[ESC]  RETURN TO MENU
          Please select [1], [2] or [ESC]
```

Abb. 2-21

(1) Einstellung der Zoom-Nachführung

Zweck	• Einstellen des Unschärfe-Berichtigungspegels während des Zoomens.
Problem bei unvollkommener Einstellung	• Scharfeinstellung geht während des Zoomens verloren.
Ausrüstung/ Vorrichtung	• Video-Farbmonitor • Rückfokus-Diagramm
Prüfpunkt	• Video-Ausgang (AV OUT)
Bedingung	• Auf das Rückfokus-Diagramm in einem Abstand von 1500 ±5 mm von der Objektiv-Oberfläche richten. • Das Diagramm mit 200 - 400 Lux ausleuchten.
Vorsicht während der Einstellung	
1: Den Abstand zwischen dem Diagramm und der Objektiv-Oberfläche genau messen. 2: Das Diagramm möglichst parallel zur Objektiv-Oberfläche anordnen. 3: Das Rückfokus-Diagramm sollte immer in der Mitte des Monitor-Bildschirms angeordnet sein, wenn das Zoom auf das Weitwinkel- und Teleobjektiv-Ende eingestellt ist. 4: Der Einstellvorgang der Zoom-Nachführung ist innerhalb von 2 Minuten beendet, nachdem er gewählt wurde. 5: Während der Einstellung keine Gegenstände zwischen dem Objektiv und dem Diagramm anordnen.	

<Vorgang>

AUTOFOKUS-EINSTELLMENÜ

```
**************************************************
        AUTO FOCUS ADJUSTMENT
**************************************************
[1]    ADJUSTMENT OF ZOOM/FOCUS TRACKING
[2]    ADJUSTMENT OF AF NOISE LEVEL
[ESC]  RETURN TO MENU
          Please select [1], [2] or [ESC]
```

Die **1**-Taste drücken, um ADJUSTMENT OF ZOOM/ FOCUS TRACKING (Einstellung der Zoom/Fokus-Spurlage) zu wählen.

```
« ADJUSTMENT OF ZOOM/FOCUS TRACKING »
          |          |          |
         0%        50%       100%
```

```
« ADJUSTMENT OF ZOOM/FOCUS TRACKING »
          ■■■■■■■■■■■■■■■■■■■■
         0%        50%       100%
        ADJUSTMENT COMPLETED.
          PRESS ANY KEY.
```

Eine beliebige Taste drücken, um auf das AUTOFOKUS-EINSTELLMENÜ zurückzukehren.

(2) Einstellung des AF-Rauschpegels

Zweck	• Einstellen des Rauschpegels.
Problem bei unvollkommener Einstellung	• Es wird einige Zeit benötigt, bis das Objekt scharf eingestellt ist. • Die richtige Scharfeinstellung wird nicht erhalten.
Ausrüstung/ Vorrichtung	• Video-Farbmonitor
Prüfpunkt	• Video-Ausgang (AV OUT)
Bedingung	• Die Kamera auf den automatischen Scharfeinstellmodus einstellen. • Auf einen Lichtkasten ohne eingesetztes Diagramm in einer Entfernung von bis zu 10 cm richten.
Vorsicht während der Einstellung	
1. Den Lichtkasten möglichst parallel zur Objektiv-Oberfläche anordnen. 2. Der Einstellvorgang für den AF-Rauschpegel wird nach 30 Sekunden beendet, nachdem er angewählt wurde.	

<Vorgang>

AUTOFOKUS-EINSTELLMENÜ

```
**************************************************
          AUTO FOCUS ADJUSTMENT
**************************************************
[1]    ADJUSTMENT OF ZOOM/FOCUS TRACKING
[2]    ADJUSTMENT OF AF NOISE LEVEL
[ESC]  RETURN TO MENU
          Please select [1], [2] or [ESC]
```

Die **2**-Taste drücken, um ADJUSTMENT OF AF NOISE LEVEL (Einstellung des AF-Rauschpegels) zu wählen.

```
« ADJUSTMENT OF AF NOISE LEVEL »
          |         |
         0%       50%      100%
```

```
« ADJUSTMENT OF AF NOISE LEVEL »
          ■■■■■■■■■■
         0%       50%      100%
      ADJUSTMENT COMPLETED.
          PRESS ANY KEY.
```

Eine beliebige Taste drücken, um auf das AUTOFOKUS-EINSTELLMENÜ zurückzukehren.

2.7.7 Stabilisator-Abgleichvorgang [Für Typ 630, 635, 835]

Vor Beginn der Einstellung
- Unbedingt diesen Abgleich nach dem Austausch oder der Initialisierung der SPE-Leiterplatte und der VCA-Leiterplatte (EEPROM) durchführen.
- In diesem Punkt ist beschrieben, wie die Stabilisator-Daten neu geschrieben werden können. Der Durchschnitt der Stabilisator-Daten eingeschrieben.

<Vorgang>

1) Das Abgleichprogramm (MAP) starten.

- Falls [ESC] (Escape) gedrückt wird, kehrt die Anzeige des Computers auf das Haupt-Menü (MAIN MENU) zurück.
- Um den Abgleich zu beenden, die [ESC] (Escape) Taste zweimal drücken, um wiederum die MS-DOS Anzeige zu erhalten, und danach den Kamerarecorder und die Vorrichtungen ausschalten.

2) Die **F**-Taste drücken, um EIS zu wählen.
3) Die **Y**-Taste drücken.

- Falls die **N**-Taste gedrückt wird, kehrt das Display des Computers auf das Haupt-Menü (MENU) zurück.
- Falls eine andere Taste als **Y** oder **N** gedrückt wird, wird "PLEASE SELECT Y/N?" (BITTE WÄHLEN JA/ NEIN?) angezeigt.

4) Die Stabilisator-Daten werden automatisch neu geschrieben.
5) Einen beliebige Taste drücken, um auf das HAUPT-MENÜ (MAIN MENU) zurückzukehren.

HAUPTMENÜ

```
**************************************************
          MANUAL ADJUSTMENT PROGRAM
**************************************************
          [A]    DATA INITIALIZE
          [B]    ELECTRIC VOLUME
          [C]    ADJUSTMENT
          [D]    VCR ADJUSTMENT
          [E]    AUTO FOCUS
          [F]    EIS
          [G]    SPOT NOISE
          [ESC]  END
          Please select [A] - [G] or [ESC]
```

Die **F**-Taste drücken.

```
« DATA WRITING »
START TO SEND DATA (Y/N)
```

Die **Y**-Taste drücken.

```
FINISHED WRITING DATA.
PRESS ANY KEY.
```

Eine beliebige Taste drücken, um auf das Haupt-Menü zurückzukehren.

2.7.8 Punktrauschen-Abgleichsvorgang

Vor Beginn der Einstellung

- Punktrauschen ist das feine weiße Rauschen, das erscheint, wenn der Objektivdeckel nach dem Einschalten der Stromversorgung angebracht wird.
- Diesen Abgleich nur für Produkte ausführen, bei welchen das Punktrauschen auftritt. (Es kommt jedoch zu keinem Problem, wenn der Abgleich auch bei Produkten ausgeführt wird, die frei von Punktrauschen sind.)
- Nach dem Austausch des CCD-Bildsensors oder der VCA-Leiterplatte (EEPROM) ist zu überprüfen, ob Punktrauschen auftritt oder nicht, worauf mit dem Abgleich fortzufahren ist.

HAUPTMENÜ

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
        Please select [A] - [G] or [ESC]
```

<Vorgang>

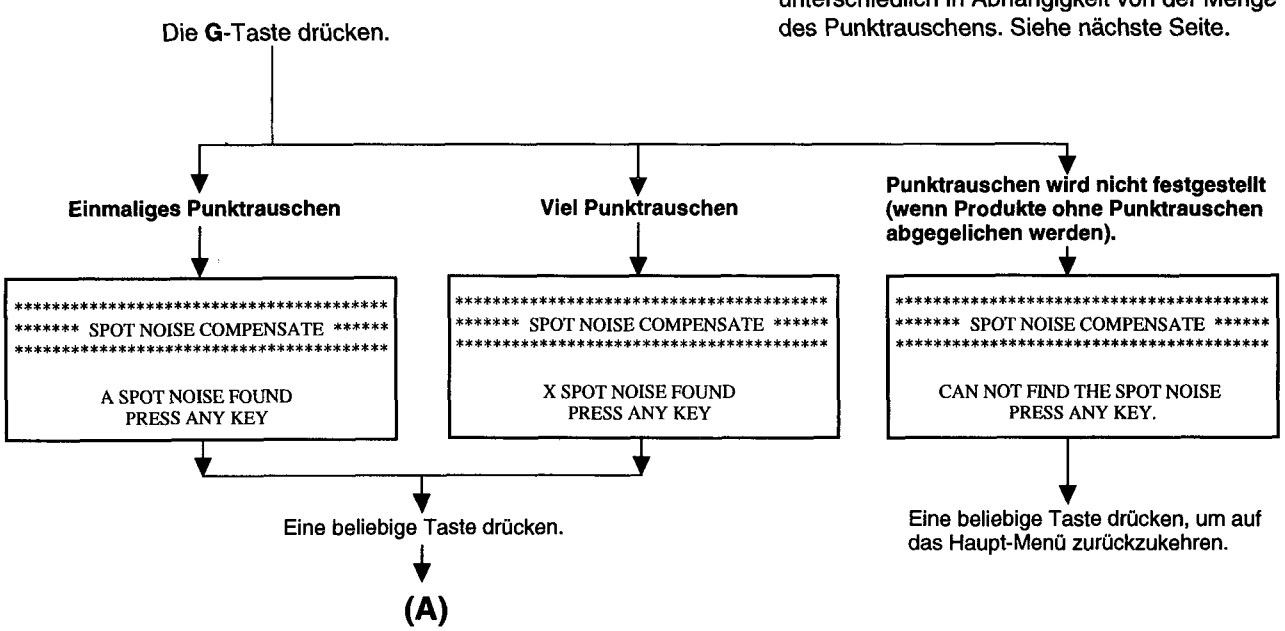
1) Das MAP starten.

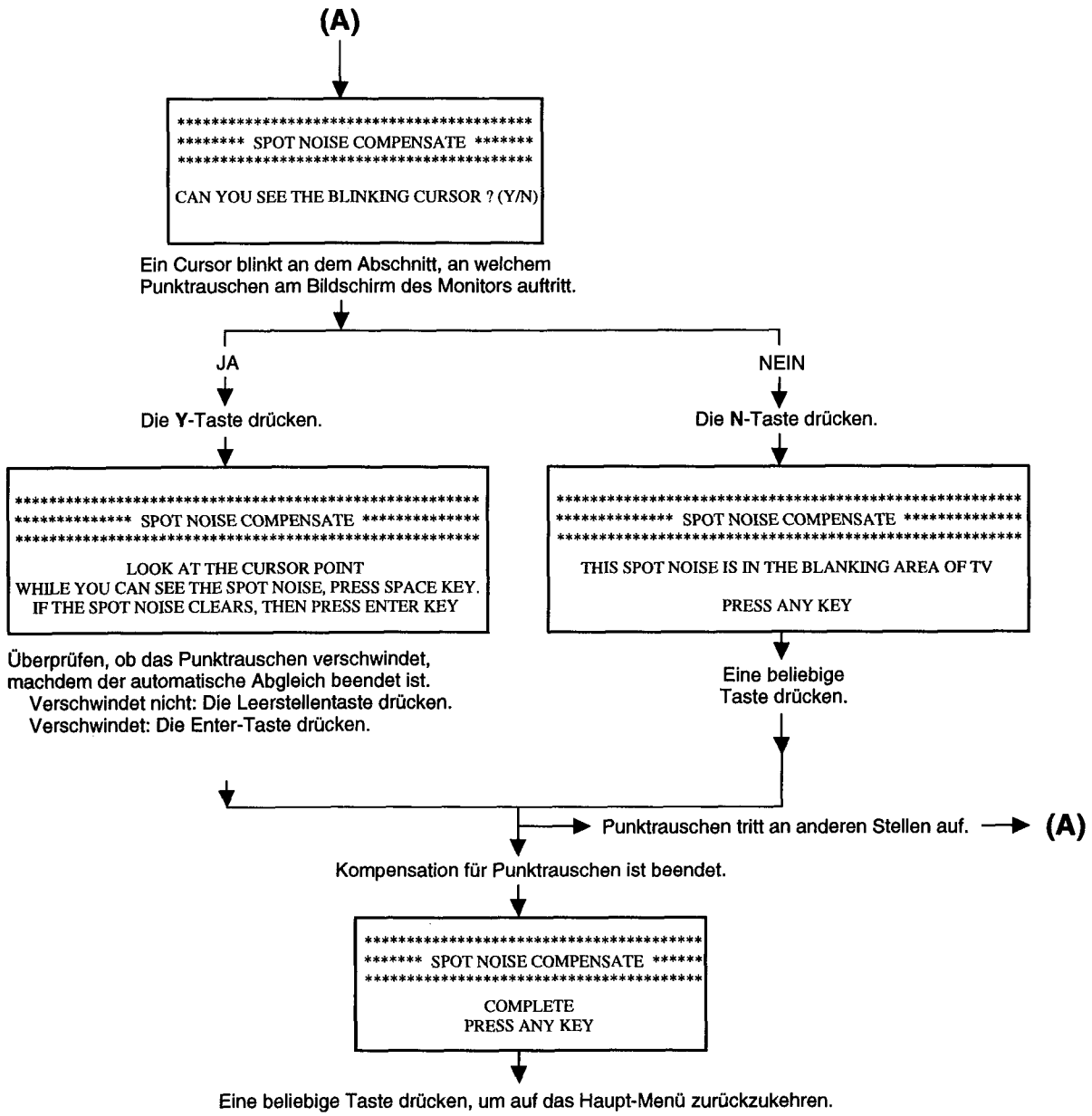
- Falls die [ESC] (Escape) Taste gedrückt wird, kehrt das Display des Computers auf das Haupt-Menü (MAIN MENU) zurück.
- Um den Abgleich zu beenden, die [ESC] (Escape) Taste zweimal drücken, um wiederum dis MS-DOS Anzeige zu erhalten, und danach den Video-Kamerarecorder und die Vorrichtung ausschalten.

2) Den Deckel am Objektiv anbringen.
3) Den Video-Farbmonitor an den Video-Ausgang anschließen.
4) Die **G**-Taste drücken, um SPOT NOISE (Punktrauschen) zu wählen.

Hinweis
Der Abgleichvorgang in diesem Punkt ist unterschiedlich in Abhängigkeit von der Menge des Punktrauschens. Siehe nächste Seite.

Hinweis: Die Abgleichvorgang in diesem Punkt ist unterschiedlich in Abhängigkeit von der Menge des Punktrauschens. Siehe nächste Seite.




(A)
********** SPOT NOISE COMPENSATE **********
CAN YOU SEE THE BLINKING CURSOR ? (Y/N)
Ein Cursor blinkt an dem Abschnitt, an welchem Punktrauschen am Bildschirm des Monitors auftritt.
JA
NEIN
Die Y-Taste drücken.
Die N-Taste drücken.
********** SPOT NOISE COMPENSATE **********
LOOK AT THE CURSOR POINT
WHILE YOU CAN SEE THE SPOT NOISE, PRESS SPACE KEY.
IF THE SPOT NOISE CLEARS, THEN PRESS ENTER KEY
********** SPOT NOISE COMPENSATE **********
THIS SPOT NOISE IS IN THE BLANKING AREA OF TV
PRESS ANY KEY
Überprüfen, ob das Punktrauschen verschwindet, machdem der automatische Abgleich beendet ist.
Verschwindet nicht: Die Leerstellentaste drücken.
Verschwindet: Die Enter-Taste drücken.
Eine beliebige Taste drücken.
Punktrauschen tritt an anderen Stellen auf.
(A)
Kompensation für Punktrauschen ist beendet.
********** SPOT NOISE COMPENSATE **********
COMPLETE
PRESS ANY KEY
Eine beliebige Taste drücken, um auf das Haupt-Menü zurückzukehren.

2.8 Einstellung des elektronischen Suchers

2.8.1 Anordnung der Abgleichteile

Hinweis: Das Bild erscheint nur dann auf dem elektronischen Sucher, wenn der LCD-Monitor geschlossen ist.

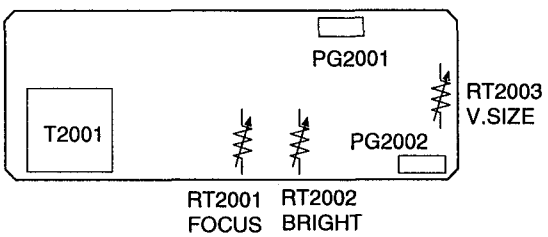


Abb. 2-51 Leiterplatte für elektronische Sucher (EVF) [Seite B]

2.8.2 Einstellvorgang

(1) Abgleiche der Ablenkungsjochposition und Zentrierung des elektronischen Suchers

Zweck • Dieser Abgleichvorgang eliminiert die Bildneigung in dem Display des elektronischen Suchers.
• Dieser Abgleich zentriert das von der Kamera aufgenommene Bild auf dem Display des elektronischen Suchers.

Einrichtung/Vorrichtung	Testpunkte	Bedingung	Abgleichpunkte
• Display des elektronischen Suchers		Auf das Auflösungsdiagramm richten.	• Ablenkungsjoch (Ablenkungsjochposition) • Zentriermagnete (Zentrierung des elektronischen Suchers)

Ablenkungsjochposition

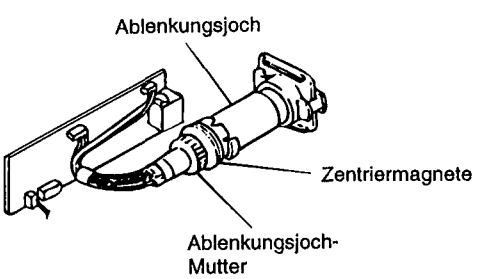
1) Die Mutter des Ablenkungsjoches lösen.
2) Das Ablenkungsjoch drehen, so daß das Bild (Diagramm) des elektronischen Suchers horizontal erscheint und mit den Kanten der Kathodenstrahlröhre ausgerichtet ist.

Hinweis: Nachdem der Abgleich beendet ist, die Mutter des Ablenkungsjochs wieder festziehen.

< Zentrierung des elektronischen Suchers >

1) Den Sicherungslack von dem Zenmtriermagnet abnehmen.
2) Die Zentriermagnet einstellen, bis die Mitte des von der Kamera aufgenommenen Bildes in der Mitte des Displays des elektronischen Suchers angeordnet ist.

Abgleichpunkte



(2) Abgleich der vertikalen Größe des elektronischen Suchers (Abb. 2-51)

Zweck Dieser Abgleich bestimmt die vertikale Größe des auf dem Display des elektronischen Suchers erscheinen Suchers erscheinenden Bildes.

Einrichtung/Vorrichtung	Testpunkte	Bedingung	Abgleichpunkt	
• Display des elektronischen Suchers		Auf das Auflösungsdiagramm richten.	• RT2003 (V.SIZE)	EVF

1) RT2003 so abgleichen, daß die Ober- und Unterkante des Diagramms mit der Ober- und Unterkante der Kathodenstrahlröhre übereinstimmen.

(3) Abgleich der EVF-Helligkeit (Abb. 2-51)

Zweck Dieser Abgleich stellt die Helligkeit des Bildes auf dem Display des elektronischen Suchers ein.

Einrichtung/Vorrichtung	Testpunkte	Bedingung	Abgleichpunkt	
• Display des elektronischen Suchers		Auf das Auflösungsdiagramm richten.	• RT2002 (BRIGHT)	EVF

1) RT2002 abgleichen, um das Bild des ekeltronischen Suchers zu optimieren.

(4) Abgleich des EVF-Fokus (Abb. 2-51)

Zweck Dieser Abgleich sorgt für optimalen Fokus des Bildes des elektronischen Suchers.

Einrichtung/Vorrichtung	Testpunkte	Bedingung	Abgleichpunkt	
• Display des elektronischen Suchers		Auf das Auflösungs-diagramm richten.	• RT2001 (FOCUS)	EVF

1) RT2001 so abgleichen, daß das Bild in dem elektronischen Sucher scharf und klar erscheint.

2.9 Einstellung des Farb-LCD-Displays

2.9.1 Anordnung der Einstellteile

Hinweis: Das Bild erscheint nur dann auf dem LCD, wenn der LCD-Monitor geöffnet ist. Um bei abgenommenem Gehäuse (LCD-Öffnungs/Schließschalter) ein Bild anzuzeigen, die Stifte 1 und 2 des PG905 auf der VCA-Leiterplatte mit einer Kurzschlußklemme usw. kurzschließen.

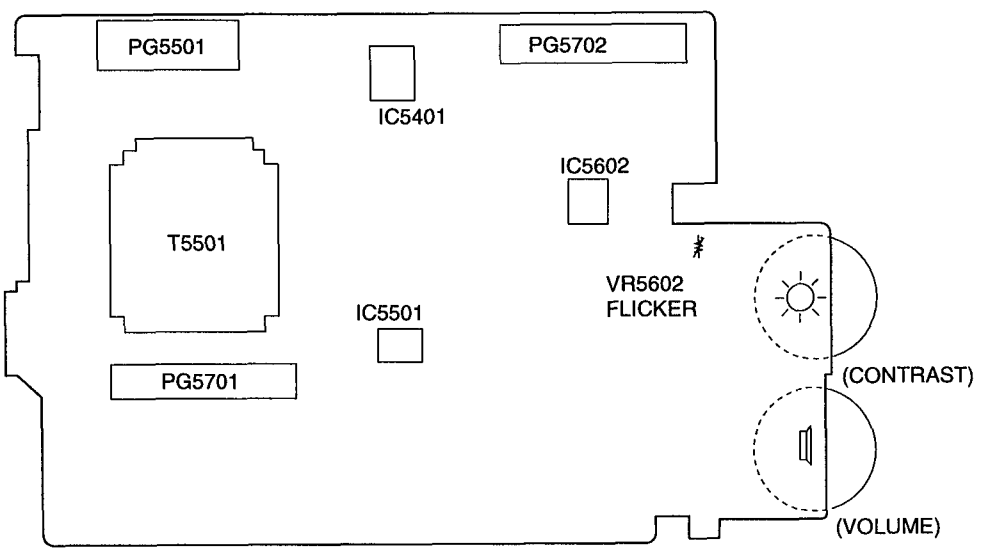


Abb. 2-101 LCD-Leiterplatte (Seite B)

2.9.2 Einstellvorgang

(1) LCD-Flimmereinstellung (Abb. 2-101)

Unbedingt diese Einstellung ausführen, nachdem die LCD-Leiterplatte und die LCD-Tafel ersetzt wurden.

Zweck • Dieser Abgleich bestimmt die vertikale Größe des auf dem Display des elektronischen Suchers erscheinen Suchers erscheinenden Bildes.

Probleme bei unvollkommener Einstellung

- Farbqualität des LCD-Bildes wird verschlechtert.
- Kontrast des LCD-Bildes nimmt ab.

Einrichtung/Vorrichtung	Testpunkte	Bedingung	Abgleichpunkt	
• Abgleichband • LCD-Display		• Das Abgleichband (Farbbalken) wiedergeben. • Den BRIGHT-Regler in die mittlere Raststellung bringen.	• RV5602 (FLICKER)	LCD

Einstellvorgang

1) VR5602:
Optimieren des Farbtons des Farbbalkens. (Wenn der Regelwiderstand um eine Umdrehung gedreht wird, kann ein Bereich festgestellt werden, in dem das Bild nicht ändert. Die Einstellung außerhalb dieses Bereichs vornehmen.)

3. Einstellung des Videorecorder-Abschnitts

3.1 Anordnung der Leiterplatten

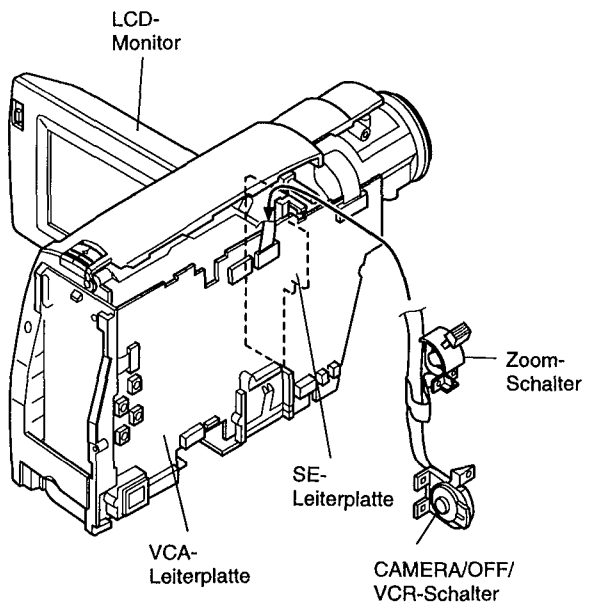


Abb. 3-1

3.2 Für die Einstellung erforderliche Ausrüstung und Abgleichbänder

Prüfausrüstung

- Oszilloskop (Doppel-Spur)
- Vektorskop
- Digital-Voltmeter (DVM)
- Frequenzzähler
- Millivoltmeter
- Video-Farbmonitor
- Farbbalkengenerator

Abgleichband usw.

- Diskette für die Einstellung
- Personal Computer
- Personal Computer 9-Stift oder 25-Stift (RS-232C) Kabel
- DSP-R Vorrichtung
- DSP AV-Ausgangsvorrichtung
- Abgleichband
- Leer-Cassette
- ATF-R Vorrichtung
- Gleichstromversorgung (DC 0-7V/3A)
- Gleichstromversorgung (DC 5V/1A)

3.3 Einstellbedingung

1) Vor der Einstellung des Videorecorder-Abschnitte darauf achten, daß der Kameraabschnitt richtig eingestellt wurde.
2) Diese Einheit, eine Stromversorgung und einen Video-Farbmonitor gemäß Abb. 1-1 anschließen.
3) Die 10:1 Sonde des Oszilloskops verwenden, wenn nicht anders angegeben.
4) Wenn der "Aufnahmemodus" spezifiziert ist, eine Leer-Cassette einsetzen und den 8 mm Video-Kamerarecorder durch den folgenden Vorgang auf den Aufnahmemodus schalten.
   ① Den CAMERA/OFF/VCR- Schalter auf Position CAMERA stellen.
   ② Die REC START/STOP Taste an dieser Einheit drücken (oder die REC START/STOP-Taste auf der Fernbedienung).
5) Bevor die im nachfolgenden Text mit einem Asteriskus (*) markierten Widerstände eingestellt werden, die entsprechenden Laser-Trimming-Widerstände durch die sepzifizierten Regelwiderstände ersetzen.
6) Bevor die Laser-Trimming-Widerstände abgelötet werden, unbedingt die einzelnen Einstellwerte kontrollieren. Nur die Widerstände entfernen, die für die entsprechende Einstellung verwendet werden.
7) Erdung der Prüfeinrichtung: Vorverstärker-Abschirmung (GND)

Vorsicht

1) Dieser Video-Kamerarecorder (Typ 535, 635 oder 835) führt den Auswurfvorgang nicht aus, wenn nicht der LCD-Monitor geöffnet ist.
   Um den Video-Kamerarecorder mit ausgebautem Gehäuse auf den Auswurfstatus zu stellen, die PG905 Stifte 1 und 2 auf der VCA-Leiterplatte mit einer Kurzschlußklemme usw. kurzschließen und danach die EJECT-Taste drücken.
2) Um die Video- und Audiosignale zu liefern, muß das AV-Eingangskabel modifiziert werden.

Vorgang zur Modifikation des AV-Eingangskabels

Obwohl die alle Modelle keine AV-Eingangsfunktion aufweisen, können Sie das AV-Eingangskabel so modifizieren, daß die Video- und Audiosignale eingespeist werden können. Für die Einstellung und die Leistungsprüfung ist das AV-Eingangskabel gemäß folgenden Vorgängen zu modifizieren, um die Signale eingeben zu können.

Vorsicht 1: Das AV-Eingangskabel nicht für andere Zwecke als die Einstellung und die Leistungsprüfung modifizieren.

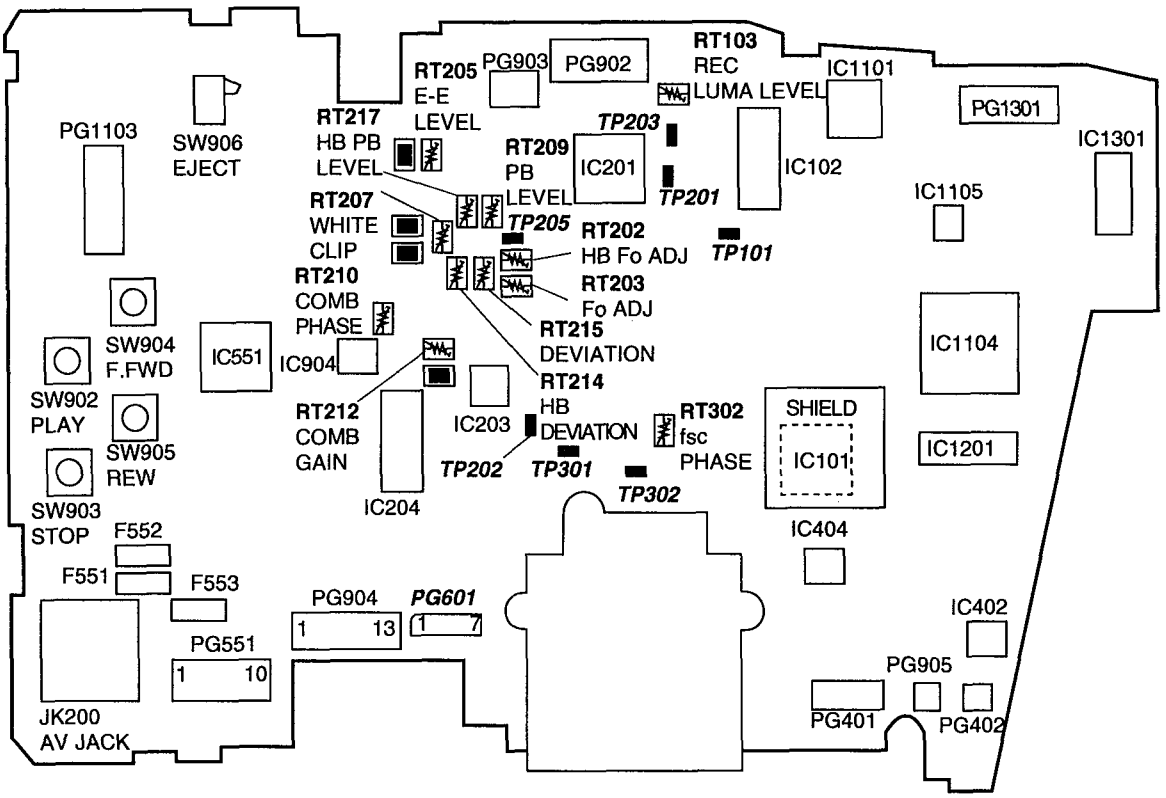
Vorsicht 2: Das AV-Eingangskabel richtig modifizieren. Falls ein falsch modifiziertes AV-Eingangskabel an einen Video-Kamerarecorder angeschlossen wird, kann es zu Fehlbetrieb kommen.

Den Anschluß von Stift 13 des AV-Eingangskabels von Masse auf Stift 2 (DC5V) ändern. (Nachdem geprüft wurde, daß Stift 13 und Masse nicht verbunden sind, Stift 13 mit Stift 2 (DC5V) verbinden.

3.4 Voreingestellte Positionen der Schalter und Regler während der Einstellung

- CAMERA/OFF/VCR-Schalter ..... Position "VCR"
- TITLE ..... Kein Display-Modus

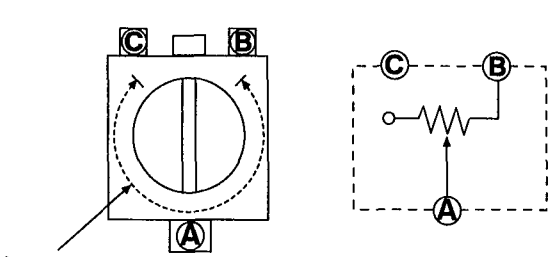
3.5 Anordnung der Einstellkomponenten



Hinweise
- Die mit "*" markierten Regelwiderstände sind Laser-Trimming-Widerstände.
- Die Testpunkte (TP) sind auf der Leiterplatte nicht angebracht.

Abb. 3-2 Hauptleiterplatte (VCA) [Seite A]

Tabelle 3-1 Regelwiderstände

Abgleich-punkt	Regelwiderstand (Ohm)	Name des Abgleichs	Abgleich-punkt	Regelwiderstand (Ohm)	Name des Abgleichs
RT0103	470	REC LUMA LEVEL	RT0210	470	COMB PHASE
RT0202	22 k	HB Fo ADJ [Für Hi-8]	RT0212	2.2 k	COMB GAIN
RT0203	22 k	Fo ADJ	RT0214	10 k	HB DEVIATION [Für Hi-8]
RT0205	10 k	E-E LEVEL	RT0215	10 k	DEVIATION
RT0207	22 k	WHITE CLIP	RT0217	22 k	HB PB LEVEL [Für Hi-8]
RT0209	22 k	PB LEVEL	RT0302	2,2 k	fsc PHASE
Abgleichbereich			**Einbaumethode**		
			Den Laser-Trimming-Wiederstand entfernen und den vorgeschriebenen Regelwiderstand anbringen.		

3.6 Nach dem Austauschen von wichtigen Komponenten in dem Recorder-Abschnitt prüfen.

Nach dem Austausch von wichtigen Komponenten die in der nachfolgenden Tabelle aufgeführten Prüfungen ausführen.
Die nachfolgende Tabelle zeigt die Einstellungen, die nach dem Austausch von wichtigen Teilen ausgeführt werden müssen.
Die nachfolgende Tabelle trifft vielleicht nicht zu, wenn mehrere Komponenten ausgetauscht wurden, abhängig von dem Symptom des Defekts.

Hinweis: Nach dem Austausch der Teile, jede Einstellung überprüfen. Falls bestimmte Punkte eingestellt werden müssen, die entsprechenden Laser-Trimming-Widerstände entfernen und durch Regelwiderstände für die Einstellung ersetzen.

Benennung	Name der Einstellung	Name der Einstellung					
		VCA-Leiterplatte	Kopftrommel	IC0901	IC0201	IC0202	IC0301
Einstellung der Systemregelungs/Servo-Schaltkreis							
(1)	Einstellung des Stromabschaltpegels	●		●			
(2)	Einstellung des Kopfwechselpunktes	●	●	●			
Einstellung des Luminanz/Chroma-Schaltkreises							
(1)	Einstellung des Kammfilters				●	●	
(2)	Einstellung des E-zu-E Video-Signalpegels				●		
(3)	Einstellung der Weißbegrenzung				●		
(4)	Einstellung der Trägerfrequenz				●		
(5)	Einstellung der Abweichung				●		
(6)	Einstellung des Aufnahme-Luminanz-Pegels				●		
(7)	Einstellung des Wiedergabe-Luminanz-Pegels				●		
(8)	Einstellung des Farbabgleichs						●

3.7 Einstellung der Systemregelungs/Servo- Schaltkreise

Vor Beginn der Einstellung
- Für die Systemregelungs/Servo-Einstellung wirdebenfalls ein Personal Computer benötigt. Den Video-Kamerarecorder, die Vorrichtungen, die Stromversorgung usw. gleich wie für die Einstellung des Kameraabschnitts anschließen.
- Unbedingt diese Einstellung ausführen, nachdem der EEPROM und die VCA-Leiterplatte ausgetauscht oder initialisiert wurden.
- Wenn eine Fehlermeldung während der Einstellung erscheint, siehe "4. Fehlermeldungen".
- Falls die [ESC] (Escape) Taste gedrückt wird, kehrt das Display des Computers auf Abb. 3-3 (HAUPTMENÜ) zurück.
- Um die Einstellung zu beenden, die [ESC] (Escape) Taste zweimal drücken, um wiederum die MS-DOS Anzeige zu erhalten, und danach den Video-Kamerarecorder und die Vorrichtung ausschalten.

<Vorgang>
1) Das MAP starten.
2) Die **D**-Taste drücken, um VCR ADJUSTMENT (Videorecorder-Einstellung) zu wählen (Abb. 3-3, 3-4).
3) Die Nummer der erforderlichen Einstellung wählen.

HAUPTMENÜ

```
**************************************************
        MANUAL ADJUSTMENT PROGRAM
**************************************************
        [A]     DATA INITIALIZE
        [B]     ELECTRIC VOLUME
        [C]     ADJUSTMENT
        [D]     VCR ADJUSTMENT
        [E]     AUTO FOCUS
        [F]     EIS
        [G]     SPOT NOISE
        [ESC]   END
        Please select [A] - [G] or [ESC]
```

Abb. 3-3

Die **D**-Taste drücken.

VIDEORECORDER-EINSTELLMENÜ

```
**************************************************
        VCR ADJUSTMENT
**************************************************
    [1]     ADJUSTMENT OF ODC
    [2]     ADJUSTMENT OF SWITCHING POINT
    [ESC]   RETURN TO MAIN MENU
        Please select [1], [2] or [ESC]
```

Abb. 3-4

(1) Einstellung des Stromabschaltpegels

Zweck • Einstellen der minimalen Spannung, die für den Betrieb des Video-Kamerarecorders erforderlich ist.

Problem bei unvollkommener Einstellung

- Die nutzbare Zeit des Akkus wird verkürzt.
- Der Video-Kamerarecorder arbeitet nicht normal.

Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkt
• DVM	• PG0551-1 VCA • PG0551-8 (GND) VCA		
• Gleichstromversorgung (0 - 7V) • 10-Stift Verlängerungskabel (7069183)	• PG0551-1 VCA • PG0551-8 (GND) VCA	• Eie Stromversorgung (7,2 ± 0,5 V) an PG0551-1 anlegen.	
• Leer-Cassette		• Eine Leer-Cassette laden.	

<Vorgang>

VIDEORECORDER-EINSTELLMENÜ

```
**************************************************
                  VCR ADJUSTMENT
**************************************************
   [1]     ADJUSTMENT OF ODC
   [2]     ADJUSTMENT OF SWITCHING POINT
   [ESC]   RETURN TO MAIN MENU
          Please select [1], [2] or [ESC]
```

Die **1**-Taste drücken, um ADJUSTMENT OF ODC (Einstellung der überentladung) zu wählen.

```
« SET UP OF ODC ADJUSTMENT STARTED »
PRESET POSITION OF 'CAMERA/OFF/VCR' SWITCH
'VCR' POSITION
SET POWER SOURCE AT 5.8 (+/- 0.05) V.
START ADJUSTING.
PRESS ANY KEY.
```

Die Spannung an PG0551-1 auf 5,8V ±0,05 V einstellen.

Eine beliegibe Taste drücken, und das Display ändert wie folgt.

```
« SETUP OF ODC ADJUSTMENT COMPLETED »
« ODC ADJUSTMENT STARTED »
« ODC ADJUSTMENT COMPLETED »
PRESS ANY KEY.
```

Eine beliebige Taste drücken, um auf das VIDEORECORDER-EINSTELLMENÜ zurückzukehren.

Hinweis: 10-Stift Verlängerungskabel (Teile Nr. 7069183)

- Stifte 1 und 2: Positiv (Rot), Stifte 6 und 7: Negativ (Brun).
- Falls das Kabel für diese Einstellung verwendet wird, die Stifte 3 und 5 mit Stift 6 oder Stift 7 (Erdung) kurzschließen.

(2) Einstellung des Kopfwechselpunktes

Hinweis: Unbedingt den Abgleich ausführen, nachdem die Kopftrommeleinheit und die VCA-Leiterplatte ausgetauscht wurden.

Zweck • Einstellung des Kopfwechselpunktes.

Problem bei unvollkommener Einstellung

- Es kommt zu vertikalem Jitter.
- Schaltrauschen erscheint auf der Unterseite des Monitor-Bildschirms.

Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkt
• Abgleichband		• Das Abgleichband wiedergeben.	

<Vorgang>

VIDEORECORDER-EINSTELLMENÜ

```
**************************************************
                  VCR ADJUSTMENT
**************************************************
  [1]    ADJUSTMENT OF ODC
  [2]    ADJUSTMENT OF SWITCHING POINT
  [ESC]  RETURN TO MAIN MENU
          Please select [1], [2] or [ESC]
```

Die **2**-Taste drücken, um ADJUSTMENT OF SWITCHING POINT (Einstellung des Kopfwechselpunktes) zu wählen.

```
« ADJUSTMENT OF SWITCHING POINT »
PRESET POSITIONS OF 'CAMERA/OFF/VCR' SWITCH
'VCR' POSITION
PRESS ANY KEY
```

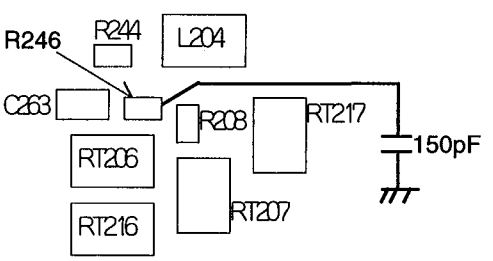
```
SET UP OF SW POINT ADJUSTMENT STARTED.
SET UP OF SW POINT ADJUSTMENT COMPLETED.
SW POINT ADJUSTMENT STARTED.
```

```
SW POINT ADJUSTMENT DATA CHEACKING.
FINISHED WRITING DATA.
ADJUSTMENT FINISHED.
PRESS ANY KEY.
```

Die Stromversorgung ausschalten.

Eine beliebige Taste drücken, um auf das VIDEORECORDER-EINSTELLMENÜ zurückzukehren.

Vorsicht:
Falls die Einstellung durch den obigen Vorgang nicht ausgeführt werden kann, einen 150 pF Kondensator zwischen R246 und GND auf der VCA-Leiterplatte anschließen, und danach die Einstellung nochmals ausführen.
Nach Beendigung der Einstellung, den Kondensator entfernen.



(VCA-Leiterplatte - Seite B)

3.8 Einstellung des Luminanz/Chroma-Schaltkreises

(1) Einstellung des Kammfilters (Abb. 3-2)

Zweck • Einstellung der Kennlinie des Kammfilters.
Problem bei unvollkommener Einstellung
• Störungen treten an den Kanten auf.
• Der Chroma-Signal/Rauschabstand wird verschlechtert.

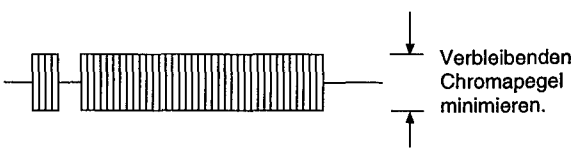
Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkte
• Oszilloskop	• TP0203 VCA	• Farbbalkensignal eingeben. • STOP-Modus	* RT0212 VCA (COMB GAIN) * RT0210 VCA (COMB PHASE)
• Farbbalkengenerator	• Video-Eingang (AV IN)		
• Leer-Cassette (Nor-8)			

<Vorgang>

1) Eine normale 8-mm Leer-Cassette laden.
2) RT0212 und RT0210: Die restlichen Chroma-Komponenten zu minimieren.

<Einstellung des Oszilloskops>
• Mit dem Videosignal triggern.

Wellenformen



(50 mV/50 µs. Teilung)

(2) Einstellung des E-zu-E Video-Signalpegels (Abb. 3-2)

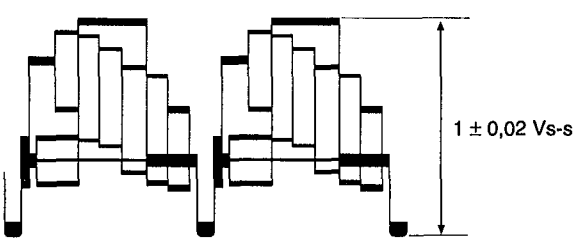
Zweck • Einstellen des Video-Ausgangspegels auf den E-zu-E Modus.
Problem bei unvollkommener Einstellung
• Das Bild wird dunkel oder weißlich in dem E-zu-E Modus.

Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkte
• Oszilloskop	• Video-Ausgang (AV OUT)	• Farbbalkensignal eingeben. • STOP-Modus	* RT0205 VCA (E-E LEVEL)
• Farbbalkengenerator	• Video-Eingang (AV IN)		
• Leer-Cassette (Nor-8)			

<Vorgang>

1) Eine normale 8-mm Leer-Cassette laden.
2) RT0205: Den Video-Ausgangspegel auf 1 V ±0,02 V einstellen.

Wellenformen



(200 mV/20 µs. Teilung)

(3) Einstellung der Weißbegrenzung (Abb. 3-2)

Zweck • Einstellen des Weißbegrenzungspegels.
Problem bei unvollkommener Einstellung
• Keine Farbe erscheint in einem sehr hellen Objekt.

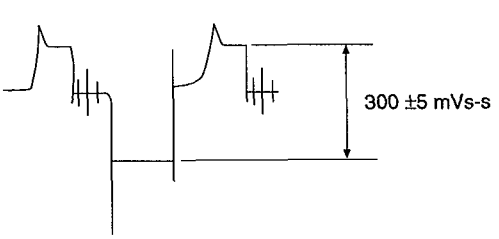
Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkte
• Oszilloskop	• TP0205 VCA	• Farbbalkensignal eingeben. • STOP-Modus	* RT0207 VCA (WHITE CLIP)
• Farbbalkengenerator	• Video-Eingang (AV IN)		
• Leer-Cassette (Nor-8)			

<Vorgang>

1) Eine normale 8-mm Leer-Cassette laden.
2) RT0207: Den Wießbegrenzungspegel auf 300 mV ±5 mVs-s einstellen.

<Einstellung des Oszilloskops>
• Mit dem Videosignal triggern.

Wellenformen



(100 mV/100 µs. Teilung)

(4) Einstellung der Trägerfrequenz (Abb. 3-2)

Zweck • Einstellen der Modulationsfrequenz des Synchronbodens des FM-Modulators auf den spezifizierten Wert.
Problem bei unvollkommener Einstellung
• Schwarz und weiß werden in dem Bild invertiert.

Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkte
• Oszilloskop	• TP0101 VCA	• Weißsignal (100%) eingeben.	* RT0203 (Fo ADJ) VCA
• Farbbalkengenerator	• Video-Eingang (AV IN)		
• Leer-Cassette (Hi-8, Nor-8)		• STOP-Modus	* RT0202 (HB Fo ADJ) VCA

<Vorgang>

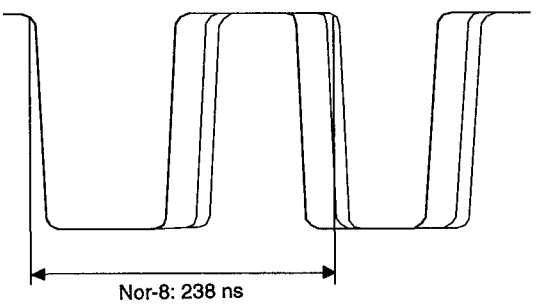
1) Eine normale 8-mm Leer-Cassette laden.
2) RT0203 so einstellen, daß die Periode des breitesten Impulses gleich 238 ns ±3 ns beträgt.

[Für Hi-8 Modell]

3) Eine Hi-8 Leer-Cassette laden.
4) RT0202 so einstellen, daß die Periode des breitesten Impulses gleich 175 ns ±3 ns beträgt.

< Einstellung des Oszilloskops >
• Das Oszilloskop intern triggern.

Wellenformen



Nor-8: 238 ns
Hi-8: 175 ns

(500 mV/50 ns. Teilung)

(5) Einstellung der Abweichung (Abb. 3-2)

Zweck • Einstellen der Modulationsfrequenz der Weißspitze des FM-Modulators auf den spezifizierten Wert.
Problem bei unvollkommener Einstellung
• Das Bilt wird dunkel oder weißlich während Aufnahme oder Wiedergabe.

Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkte
• Oszilloskop	• TP0101 MAN	• Weißsignal (100%) eingeben.	* RT0215 VCA (DEVIATION)
• Farbbalkengenerator	• Video-Eingang (AV IN)		
• Leer-Cassette (Hi-8, Nor-8)		• STOP-Modus	* RT0214 VCA (HB DEVIATION)

<Vorgang>

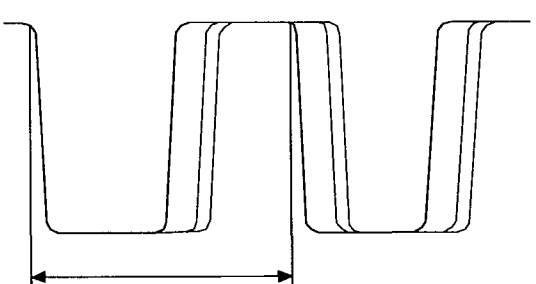
1) Eine normale 8-mm Leer-Cassette laden.
2) RT0215 so einstellen, daß die Periode des schmälsten Impulses gleich 184 ns ±2 ns beträgt.

[Für Hi-8 Modell]

3) Eine Hi-8 Leer-Cassette laden.
4) RT0214 so einstellen, daß die Periode des schmälsten Impulses gleich 130 ns ±2 ns beträgt.

< Einstellung des Oszilloskop >
• Das Oszilloskop intern triggern.

Wellenformen



Nor-8: 184 ns
Hi-8: 130 ns

(500 mV/50 ns. Teilung)

(6) Einstellung des Aufnahme-Luminanz-Pegels (Abb. 3-2)

Zweck • Einstellen der Luminanz-Aufnahmepegels auf den spezifizierten Wert.
Problem bei unvollkommener Einstellung
• Der Luminanz-Signal/Rauschabstand wird verschlechtert.
• Schwebungen erscheinen auf dem Monitor-Bildschirm.

Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkte
• Oszilloskop	• CH-1: Video-Ausgang (AV OUT) • CH-2: TP0101 VCA	• Weißsignal (100%) eingeben. • STOP-Modus	* RT0103 VCA (REC LUMA LEVEL)
• Farbbalkengenerator	• Video-Eingang (AV IN)		
• ATF-R Vorrichtung (SW3:ON)	• PG0601 VCA		
• Leer-Cassette (Nor-8, Hi-8)			

<Vorgang>

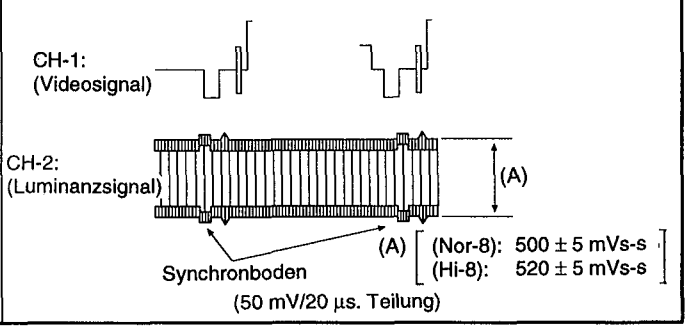
[Für Nor-8 Modell]
1) Eine normale 8-mm Leer-Cassette laden.
[Für Hi-8 Modell]
1) Eine Hi-8 Leer-Cassette laden.

2) Die ATF-R Vorrichtung an PG0601 anschließen und die Stromversorgung ausschalten.
3) Den Video-Kamerarecorder mit Hilfe der folgenden Vorgänge auf den Testmodus einstellen.
– Vorgänge für das Einstellen auf den Testmodus –
1 Die Stromversorgung von dem Video-Kamerarecorder entfernen.
2 Den CAMERA/OFF/VCR-Schalter auf Position CAMERA stellen.
3 Darauf achten, daß die ATF-R Vorrichtung (SW1: OFF, SW3: ON) angeschlossen ist, die Wiedergabetaste betätigen und gedrückt halten und danach die Stromversorgung des Video-Kamerarecorders wieder anschließen.
4) Die Einheit auf den Ladestatus stellen.

[Für Nor-8 Modell]
5) RT0103 so einstellen, daß der Synchronboden in dem Aufnahme-Luminanzsignal gleich 500 mV ±5 mVs-s beträgt.
[Für Hi-8 Modell]
5) RT0103 so einstellen, daß der Synchronboden in dem Aufnahme-Luminanzsignal gleich 520 mV ±5 mVs-s beträgt.

< Einstellung des Oszilloskops>
• Mit dem Videosignal triggern.

Wellenformen



(7) Einstellung des Wiedergabe-Luminanz-Pegels (Abb. 3-2)

Hinweis: Diese Einstellung ausführen, nachdem die Einstellung des Aufnahme-Luminanz-Pegels beeden.

Zweck • Einstellen des Luminanz-Wiedergabepegels auf den spezifizierten Wert.
Problem bei unvollkommener Einstellung
• Das Bild wird dunkel oder weißlich während der Wiedergabe.

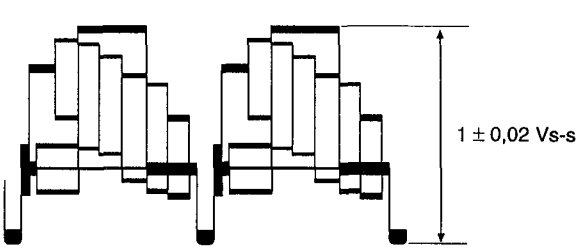
Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkte
• Oszilloskop	• Video-Ausgang (AV OUT)	• Das Farbbalkensignal aufnehmen und auf dem gleiche Videorecorder wiedergeben.	* RT0209 VCA (PB LEVEL) * RT0217 VCA (HB PB LEVEL)
• Leer-Cassette (Hi-8, Nor-8)			
• Farbbalkengenerator	• Video-Eingang (AV IN)		

<Vorgang>

[Für Nor-8 Modell]
1) Die normale 8-mm Cassette wiedergeben.
2) RT0209: Den Wiedergabe-Luminanzpegel auf 1 V ±0,02 V einstellen.

[Für Hi-8 Modell]
1) Die Hi-8 Cassette wiedergeben.
2) RT0217: Den Wiedergabe-Luminanzpegel auf 1 V ±0,02 V einstellen.

Wellenformen



(200 mV/20 µs. Teilung)

(8) Einstellung des Farbabgleichs (Abb. 3-2)

Zweck • Einstellen des Farbtons der Farbabgleich-Leiterplatte

Problem bei unvollkommener Einstellung

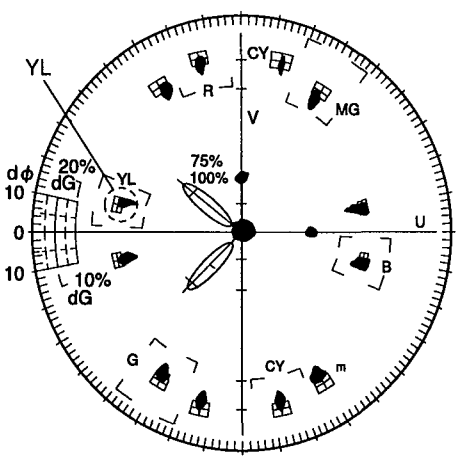
• Keine Farbe erscheint während der Trick-Wiedergabe oder die Farbreproduktion ist defekt.

Ausrüstung/Vorrichtung	Prüfpunkte	Bedingung	Einstellpunkte
• Gleichstromversorgung (0 bis 8 V)	• TP0302 VCA	• Das Abgleichband wiedergeben.	* RT0302 (fsc PHASE) VCA
• Vektorskop	• Video-Ausgang (A/V OUT)		
• ATF-R Vorrichtung (SW3: ON)	• PG0601 VCA		
• Abgleichband			

<Vorgang>

1) Ein mit 75 Ohm abgeschlossenes Vektorskop an den Video-Ausgang (A/V OUT) anschließen.
2) Die ATF-R Vorrichtung an PG0601 anschließen und die Stromversorgung ausschalten.
3) Die FF Taste betratigen und gedrückt halten, und danach den Stromschalter auf Position VCR stellen, so daß die Einheit auf den Testmodus (verwendet exklusiv für die Einstellung des Farbabgleichs) geschaltet wird.
4) Die PLAY Taste drücken und das Abgleichband wiedergeben.
5) Die Stromversorgung (5 V Gs) über einen 1 kOhm Widerstand an TP0302 anlegen.
6) Die YL-Chromaphase überprüfen.
7) Die PLAY Taste drücken.
8) Den RT0302 so einstellen, daß die YL-Chromaphase vor und nach dem Drücken der PLAY Taste ausgerichtet ist (±10 Grad).

Hinweis: Wenn die PLAY Taste gedrückt wird, nachdem die Einheit auf den Testmodus geschaltet wurde, wird die Einheit auf den normalen Wiedergabemodus geschaltet. Wenn die PLAY Taste nochmals gedrückt wird, schaltet die Einheit auf den Farbabgleich-Einstellmodus.



4. Fehlermeldungen

4.1 Kamera-Regelwinderstände und Digital-Einstellung

Fehlermeldung	*Gegenmaßnahme*
ERROR OCCURRED. IRIS TROUBLE PRESS ANY KEY	• Überprüfen, ob Strom angelegt wird oder nicht. • Die Werte des Blenden-Treiberkreises überprüfen. • Lötung defekt, Leiterbahn beschädigt usw. im oberen Schaltkreis. • Den Blendenblock überprüfen und ggf. erneuern.
ERROR OCCURRED ON da ADJUSTMENT PRESS ANY KEY	• Die Werte in dem Hall-Verstärker-Schaltkreis überprüfen. • Lötung defekt, Leiterbahn beschädigt usw. im oberen Schaltkreis.
D RANGE OVER. ERROR ON daX ADJUSTMENT PRESS ANY KEY	• Die Werte in dem Hall-Verstärker-Schaltkreis überprüfen. • Lötung defekt, Leiterbahn beschädigt usw. im oberen Schaltkreis.
ERROR OCCURRED ERROR ON da0 and da1 ADJUSTMENT PRESS ANY KEY	• Die Werte in dem Hall-Verstärker-Schaltkreis und seinen Peripherie-Schaltkreisen überprüfen. • Lötung defekt, Leiterbahn beschädigt usw. on den obigen Schaltkreisen.
FILE NOT FOUND !!!! PRESS ANY KEY	• Das Einstellprogramm (Datei) kann nicht gefunden werden. • Die Diskette für die Einstellung überprüfen und erneuern, wenn erforderlich.
FILE OPEN ERROR !!!! PRESS ANY KEY	• Das Einstellprogramm (Datei) startet nicht. • Die Diskette für die Einstellung überprüfen und erneuern, wenn erforderlich.
ERROR OCCURRED ON C DUTY ADJUSTMENT PRESS ANY KEY	• Die Werte des Blenden-Treiberkreises überprüfen. • Lötung defekt, Leiterbahn beschädigt usw. im oberen Schaltkreis.
ERROR OCCURRED ON FDET ADJUSTMENT PRESS ANY KEY	• Stromversorgung nochmals einschalten und Einstellung nochmals vornehmen. • Die Werte in dem Hall-Verstärker-Schaltkreis überprüfen. • Lötung defekt, Leiterbahn beschädigt usw. im obigen Schaltkreis.
ERROR OCCURRED. ZOOM DOES NOT WORK PRESS ANY KEY	• Stromversorgung nochmals einschalten und Einstellung nochmals vornehmen.
TOO BRIGHT PRESS ANY KEY	• Das Objekt ist zu hell. • Die Kamera von dem Lichtkasten etwas entfernen.
TOO DARK PRESS ANY KEY	• Das Objekt ist zu dunkel. • Den Lichtkasten überprüfen. • Die Kamera näher an den Lichtkasten heranbringen.
D RANGE OVER ERROR ON HALL AMP IRIS CANNOT OPEN ANY MORE PRESS ANY KEY	• Stromversorgung nochmals einschalten und Einstellung nochmals vornehmen. • Das Objekt ist zu dunkel. • Den Lichtkasten überprüfen. • Die Kamera näher an den Lichtkasten heranbringen. • Die Werte in dem Hall-Verstärker-Schaltkreis überprüfen. • Lötung defekt, Leiterbahn beschädigt usw. im obigen Schaltkreis.
SATURATION ERROR. TOO BRIGHT PRESS ANY KEY	• Das Objekt ist zu hell. • Die Kamera von dem Lichtkasten etwas entfernen.
CAN'T ADJUST WHILE BALANCE PLEASE RETRY PRESS ANY KEY	• Das Objekt ist zu hell oder zu dunkel. • Den Lichtkasten überprüfen. • Die Kamera näher an den Lichtkasten heranbringen oder etwas von diesem entfernen. • Stromversorgung nochmals einschalten und Einstellung nochmals vornehmen.

4.2 Autofokus-Einstellung

Fehlermeldung	*Gegenmaßnahme*
TIME OUT ERROR ON FOCUS	• Bedingungen des Objekts überprüfen. • Falls diese Fehlermeldung erscheint, auch wenn die Einstellung zwei- bis dreimal ausgeführt wurde, ist das Autofokus-Schaltkreissystem defekt. • Siehe (1) der Störungsbeseitigung des Autofokus.
TIME OUT ERROR ON ZOOM	• Falls diese Fehlermeldung erscheint, auch wenn die Einstellung zwei- bis dreimal ausgeführt wurde, ist das Autofokus-Schaltkreissystem defekt. • Siehe (2) der Störungsbeseitigung des Autofokus.
TIME OUT ERROR ON AF STEP	• Bedingungen des Objekts überprüfen. • Falls diese Fehlermeldung erscheint, auch wenn die Einstellung zwei- bis dreimal ausgeführt wurde, ist das Autofokus-Schaltkreissystem defekt. • Siehe (1) der Störungsbeseitigung des Autofokus.
AF LIMIT OVER	• Bedingungen des Objekts überprüfen. • Falls diese Fehlermeldung erscheint, auch wenn die Einstellung zwei- bis dreimal ausgeführt wurde, ist das Autofokus-Schaltkreissystem defekt. • Siehe (2) der Störungsbeseitigung des Autofokus.
AF ERROR	• Falls diese Fehlermeldung erscheint, auch wenn die Einstellung zwei- bis dreimal ausgeführt wurde, ist das Autofokus-Schaltkreissystem defekt. • Siehe (1) der Störungsbeseitigung des Autofokus.
TOO DARK	• Unzureichende Beleuchtung. Das Objekt überprüfen.

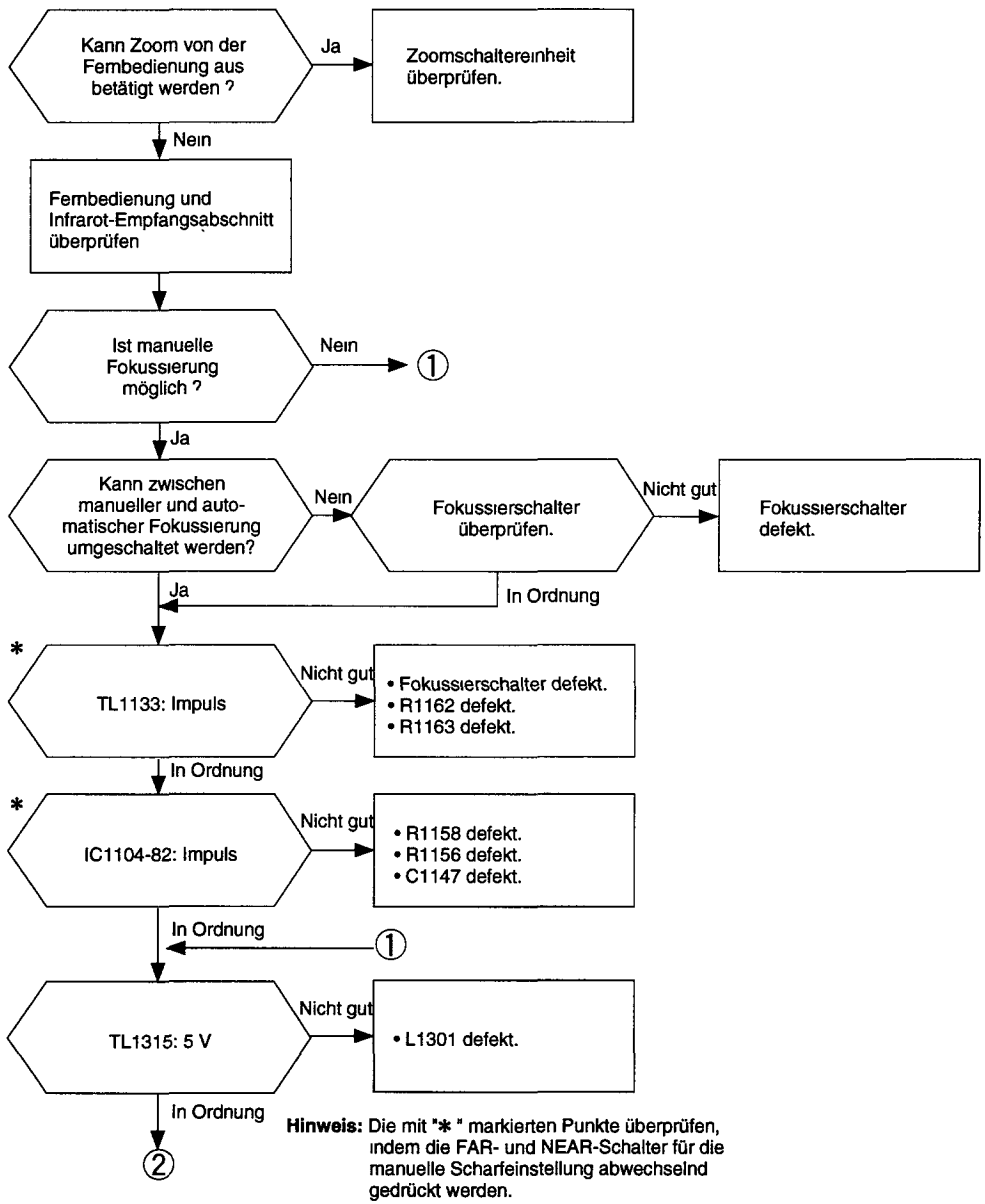
4.3 Punktrauschenabgleich

Fehlermeldung	*Gegenmaßnahme*
ERROR!! SPOT NOISE COMPENSATION IS STOPPED BY INITIAL DATA. PLEASE CHECK THE EEPROM. PRESS ANY KEY.	• Die Kompensation für Punktrauschen ist durch die Daten im EEPROM gesperrt. • Die Stromversorgung erneut einschalten. • Die Daten im EEPROM sind defekt. (Diesen initialisieren.) • Den EEPROM prüfen und erneuern, wenn erforderlich.
ERROR!! THRESHOLD DATA ERROR. PLEASE CHECK THE EEPROM. PRESS ANY KEY.	• Die Stromversorgung erneut einschalten. • Die Daten im EEPROM sind defekt. (Diesen initialisieren.) • Den EEPROM überprüfen und erneuern, wenn erforderlich.
ERROR!! THE SPOT NOISE IS TOO MANY. CAN NOT COMPENSATE ANY MORE. PRESS ANY KEY.	• Der Grenzwert des zu kompensierenden Punktrauschens ist erreicht. • Die Stromversorgung erneut einschalten. • Den CCD-Bildsensor überprüfen und erneuern, wenn erforderlich.

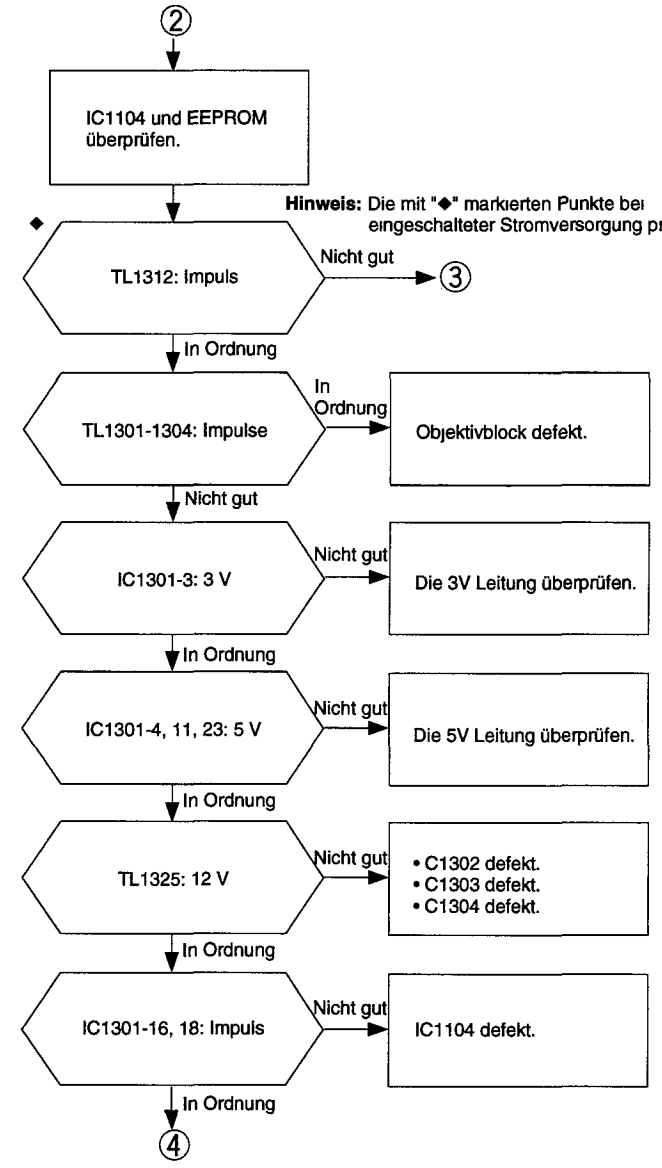
4.4 Videorecorder-Einstellung

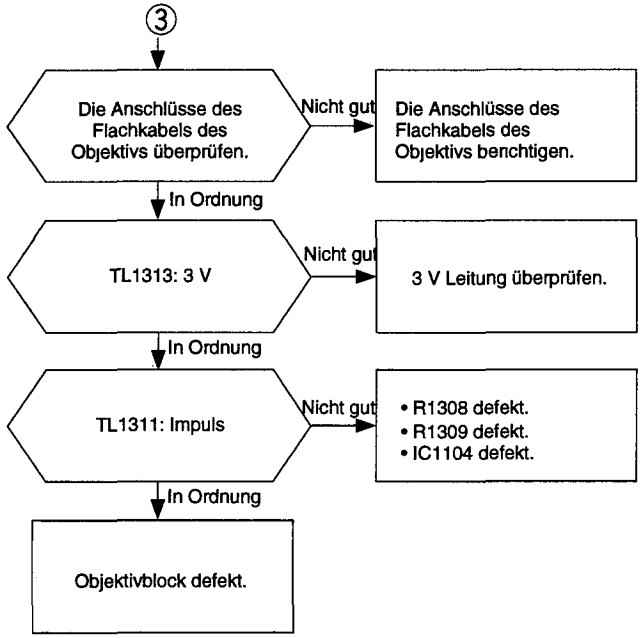
Fehlermeldung	*Gegenmaßnahme*
ERROR : SWP_TEST > DAT FILE NOT FOUND !	• Das Einstellprogramm kann nicht gefunden werden. • Die Diskette für die Einstellung überprüfen und erneuern, wenn erforderlich.
ERROR : INVALID MODEL PRESS ANY KEY	• Ein falsches Modell wurde gewählt. • Das Einstellprogramm kann nicht gefunden werden. • Die Diskette für die Einstellung überprüfen und erneuern, wenn erforderlich.
THIS MODEL NEED NOT BE ADJUSTED PRESS ANY KEY	• Ein falsches Modell wurde gewählt. • Ein Produkt, das eine Analog-Einstellung benötigt, ist angeschlossen.
ADJUSTMENT INCOMPLETED PRESS ANY KEY	• Der durch die Einstellung eingestellte Wert ist falsch. • Nochmals einstellen. • Die Kopftrommel kontrollieren. • Das Abgleichband kontrollieren. • Überprüfen, ob der normale Vorgang richtig ausgeführt wird oder nicht.
RETRY ADJUSTING. PRESS ANY KEY	• Stromversorgung nochmals einschalten und Einstellung nochmals vornehmen.
CAMERA IS NOT READY	• Überprüfen, ob Strom angelegt wird oder nicht.
ERROR OCCURRED. CAN'T PLAY BACK PRESS ANY KEY	• Kein Wiedergabe-Video • Das Wiedergabesignal überprüfen.
ERROR OCCURRED. NO V.SYNC FOUND PRESS ANY KEY	• Vertikaler Synchronverlust • Das Vertikal-Synchronsignal überprüfen.
INVALID MODEL PRESS ANY KEY	• Ein falsches Modell wurde gewählt. • Das Einstellprogramm kann nicht gefunden werden. • Die Diskette für die Einstellung überprüfen und erneuern, wenn erforderlich.
ERROR OCCURRED CAN'T RECORD PRESS ANY KEY	• Keine Video-Aufnahme • Das Aufnahmesignal überprüfen.

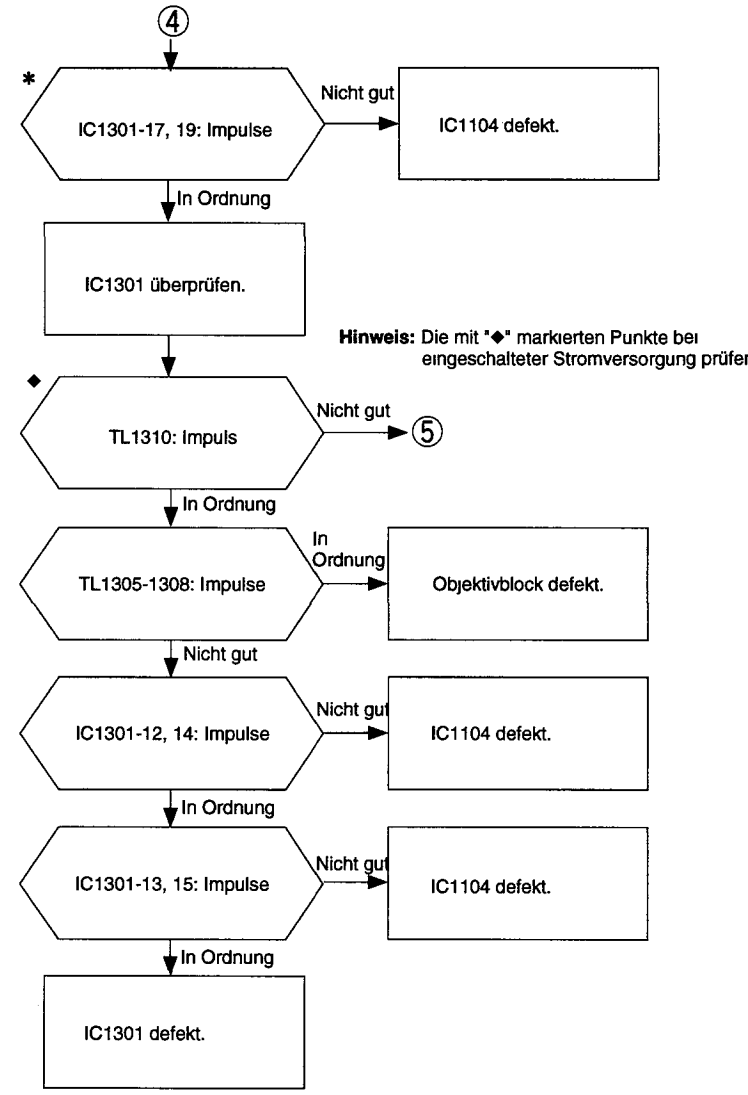
(1) ZOOM UND FOKUSSIERUNG ARBEITEN NICHT

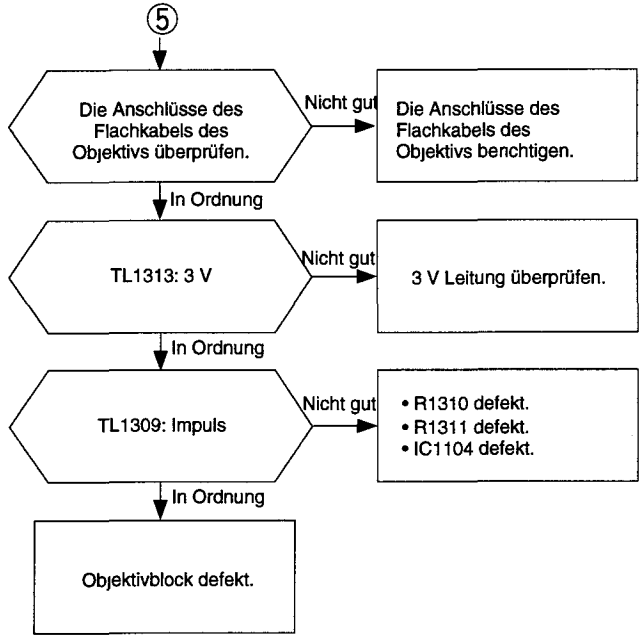


Hinweis: Die mit "*" markierten Punkte überprüfen, indem die FAR- und NEAR-Schalter für die manuelle Scharfeinstellung abwechselnd gedrückt werden.

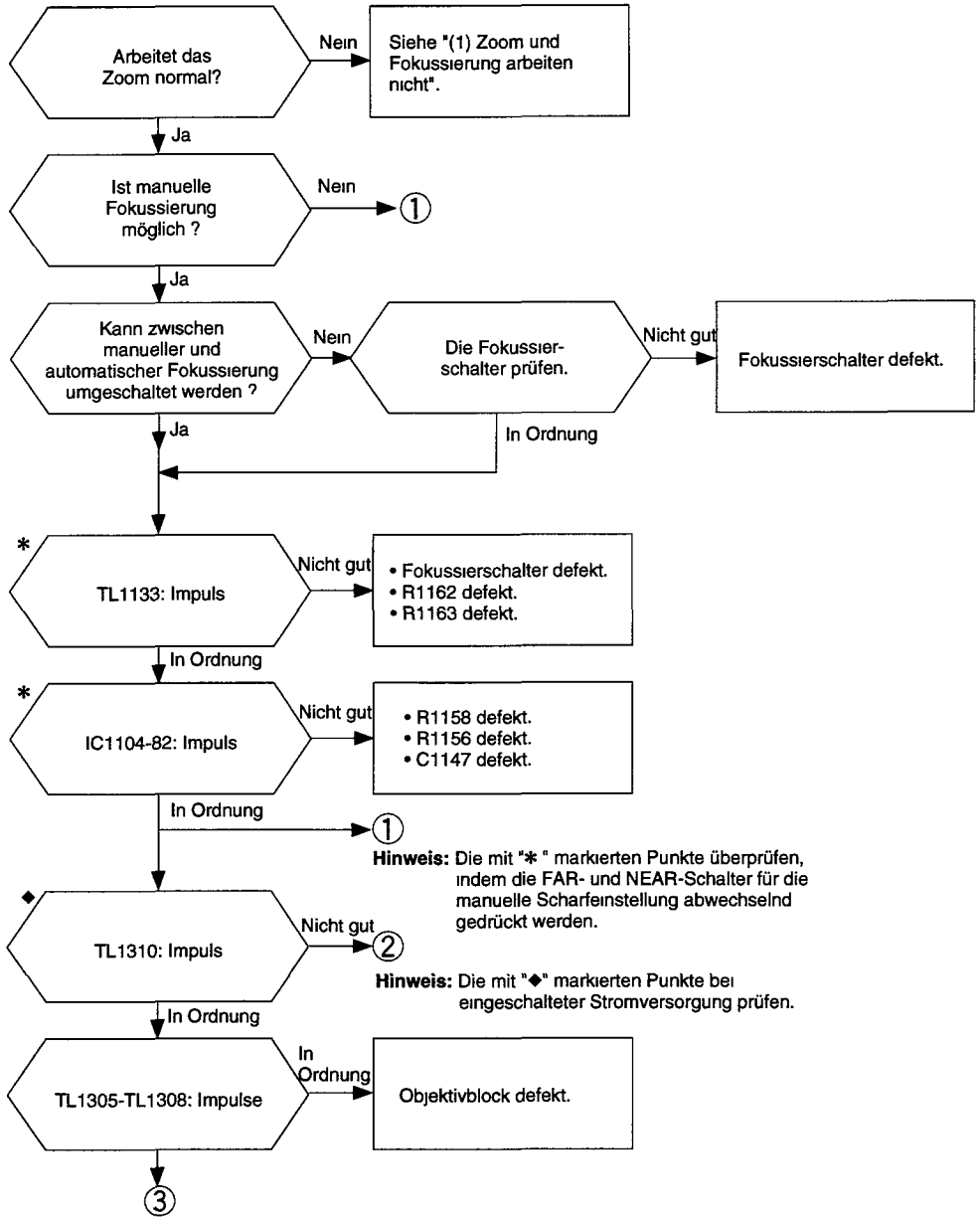


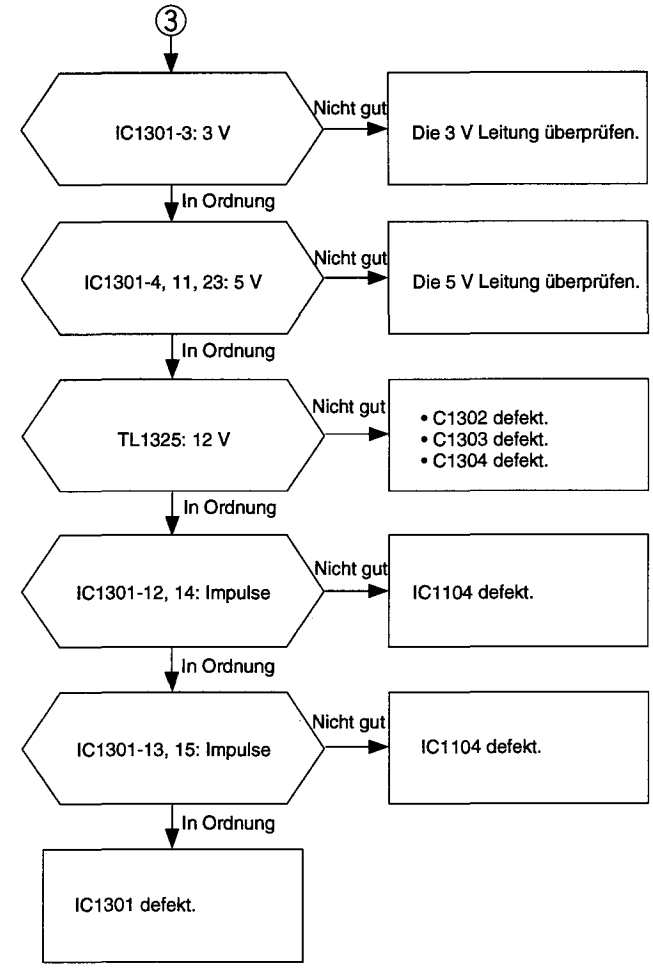

③
Die Anschlüsse des Flachkabels des Objektivs überprüfen.
Nicht gut
Die Anschlüsse des Flachkabels des Objektivs berichtigen.
In Ordnung
TL1313: 3 V
Nicht gut
3 V Leitung überprüfen.
In Ordnung
TL1311: Impuls
Nicht gut
• R1308 defekt.
• R1309 defekt.
• IC1104 defekt.
In Ordnung
Objektivblock defekt.

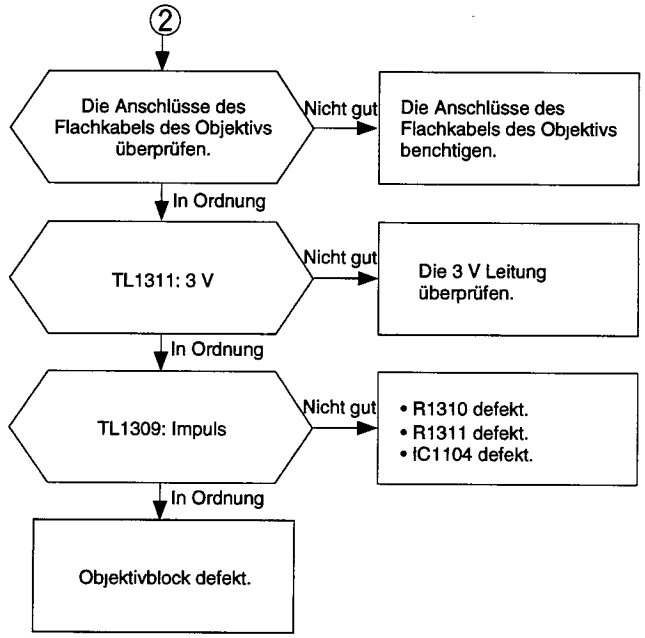

④
*
IC1301-17, 19: Impulse
Nicht gut
IC1104 defekt.
In Ordnung
IC1301 überprüfen.
Hinweis: Die mit "◆" markierten Punkte bei eingeschalteter Stromversorgung prüfen.
◆
TL1310: Impuls
Nicht gut
⑤
In Ordnung
TL1305-1308: Impulse
In Ordnung
Objektivblock defekt.
Nicht gut
IC1301-12, 14: Impulse
Nicht gut
IC1104 defekt.
In Ordnung
IC1301-13, 15: Impulse
Nicht gut
IC1104 defekt.
In Ordnung
IC1301 defekt.


⑤
Die Anschlüsse des Flachkabels des Objektivs überprüfen.
Nicht gut
Die Anschlüsse des Flachkabels des Objektivs benchtigen.
In Ordnung
TL1313: 3 V
Nicht gut
3 V Leitung überprüfen.
In Ordnung
TL1309: Impuls
Nicht gut
• R1310 defekt.
• R1311 defekt.
• IC1104 defekt.
In Ordnung
Objektivblock defekt.

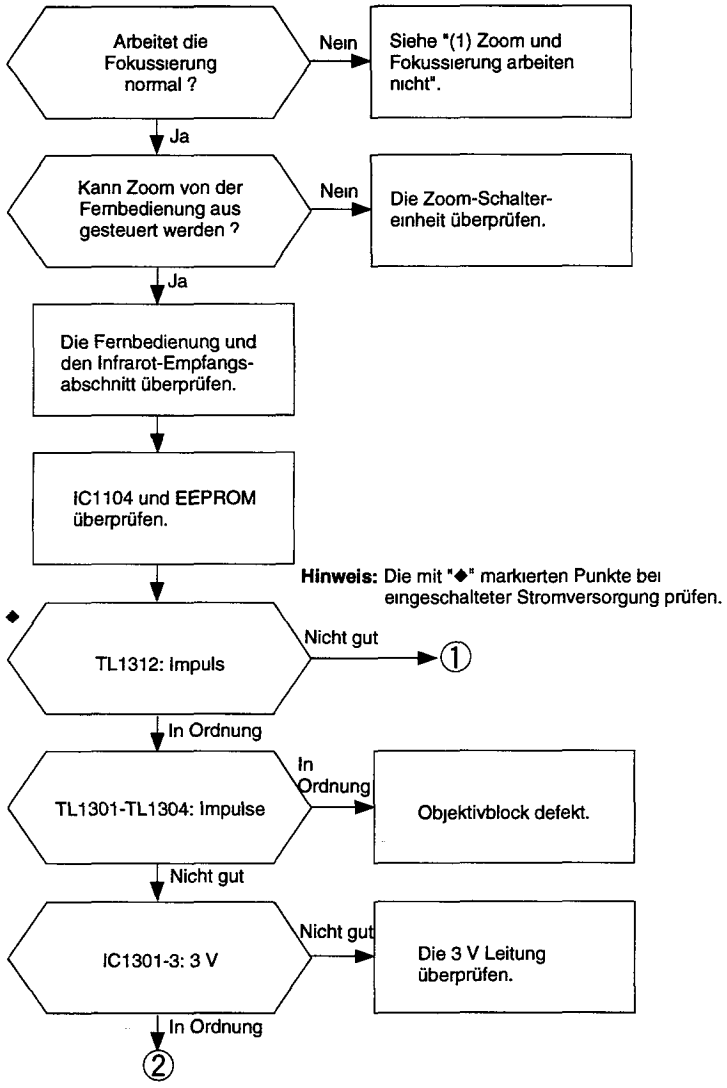
(2) FOKUSSIEROBJEKTIV ARBEITET NICHT

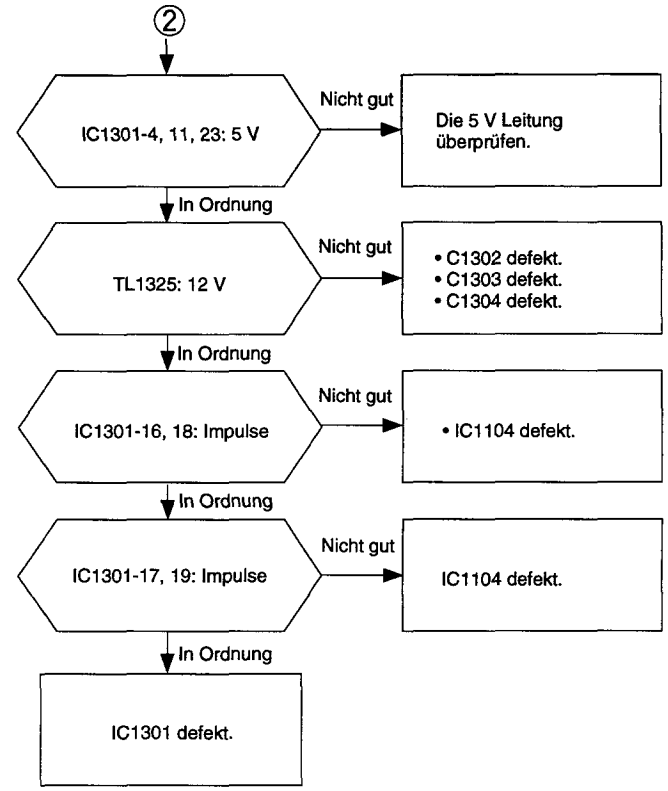


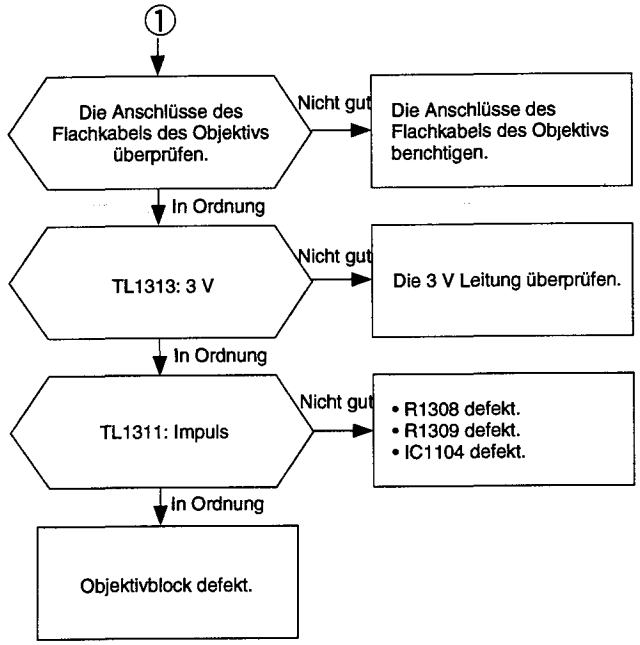



②
Die Anschlüsse des Flachkabels des Objektivs überprüfen.
Nicht gut
Die Anschlüsse des Flachkabels des Objektivs benchtigen.
In Ordnung
TL1311: 3 V
Nicht gut
Die 3 V Leitung überprüfen.
In Ordnung
TL1309: Impuls
Nicht gut
• R1310 defekt.
• R1311 defekt.
• IC1104 defekt.
In Ordnung
Objektivblock defekt.

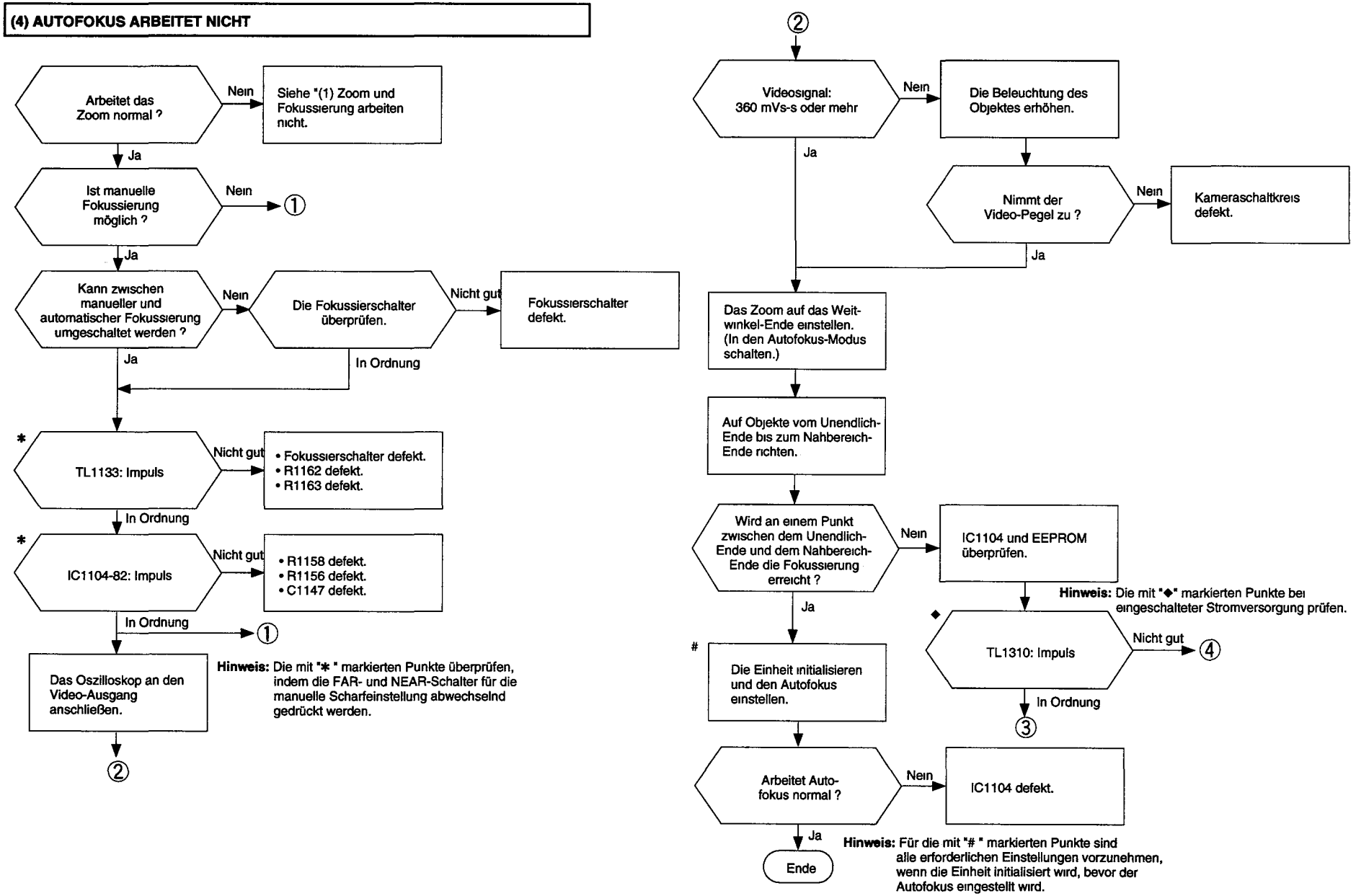
(3) ZOOM ARBEITET NICHT

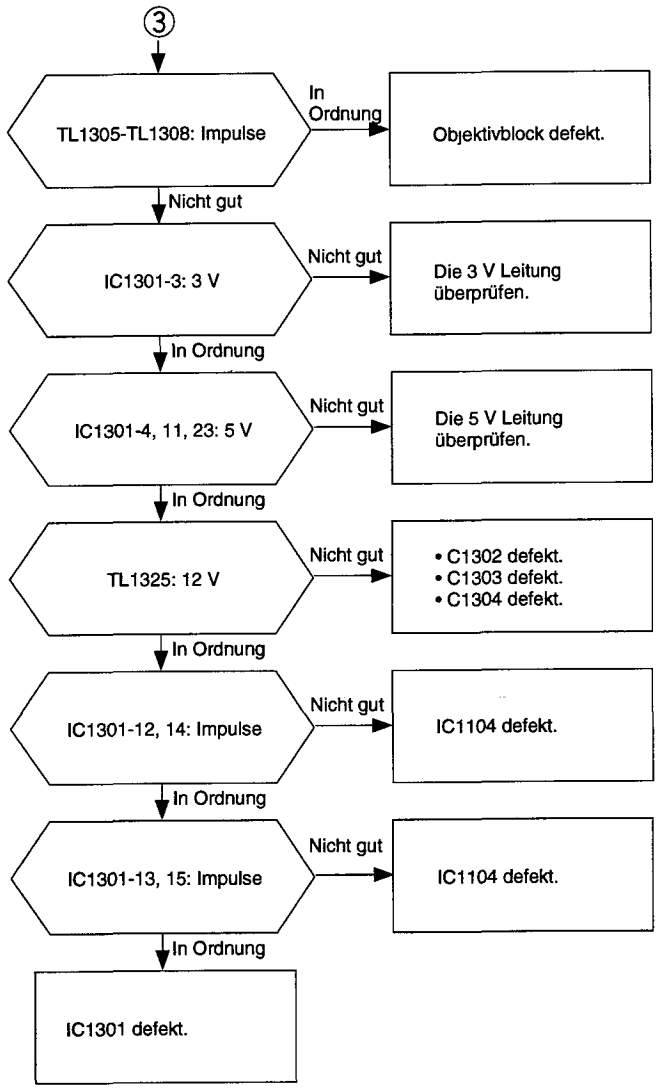


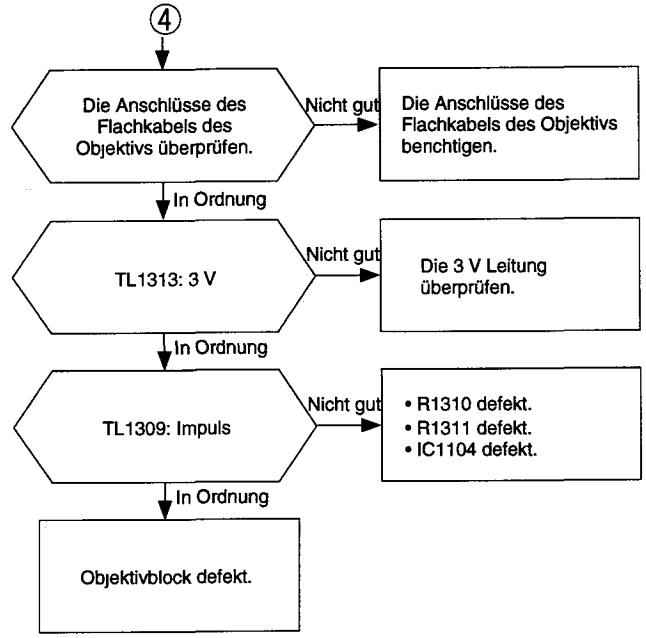



①
Die Anschlüsse des Flachkabels des Objektivs überprüfen.
Nicht gut
Die Anschlüsse des Flachkabels des Objektivs berichtigen.
In Ordnung
TL1313: 3 V
Nicht gut
Die 3 V Leitung überprüfen.
In Ordnung
TL1311: Impuls
Nicht gut
• R1308 defekt.
• R1309 defekt.
• IC1104 defekt.
In Ordnung
Objektivblock defekt.

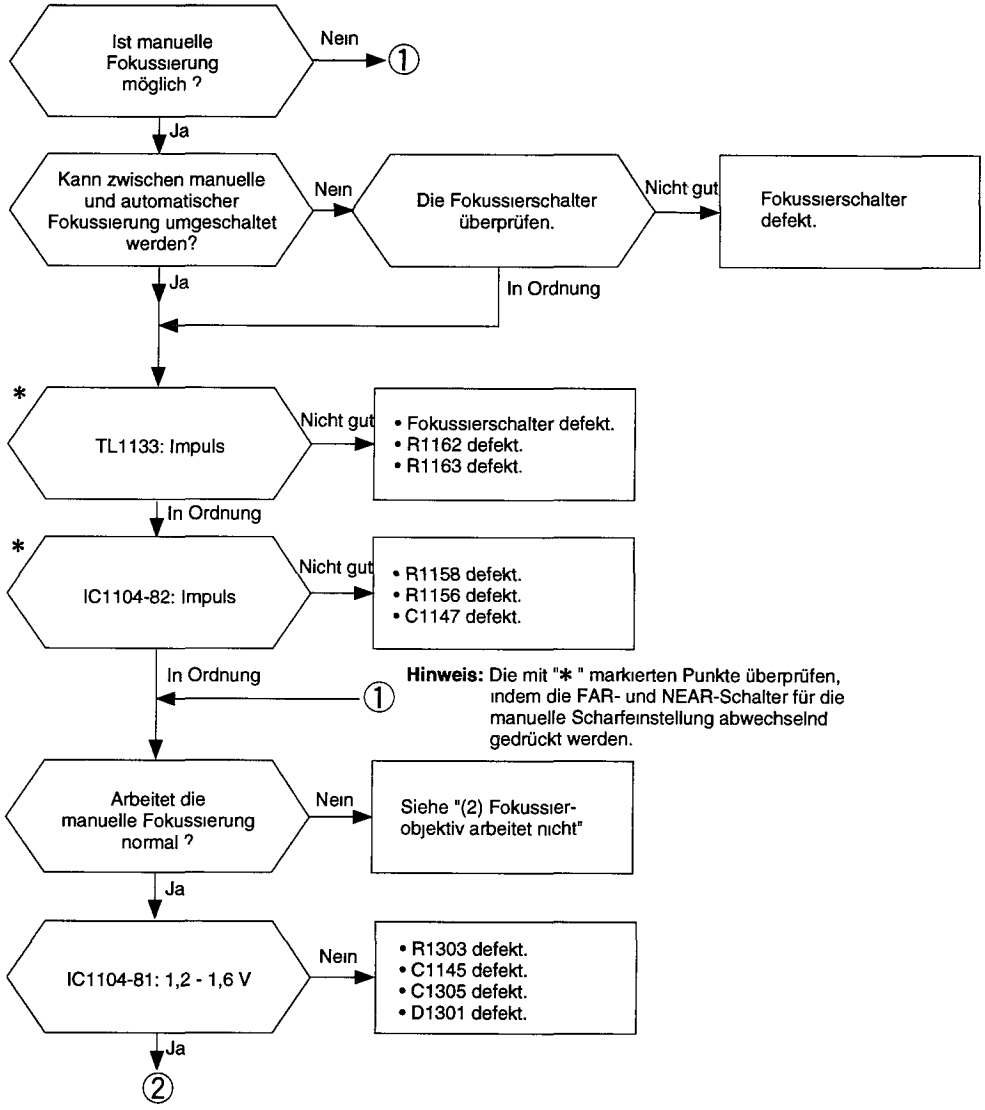
(4) AUTOFOKUS ARBEITET NICHT

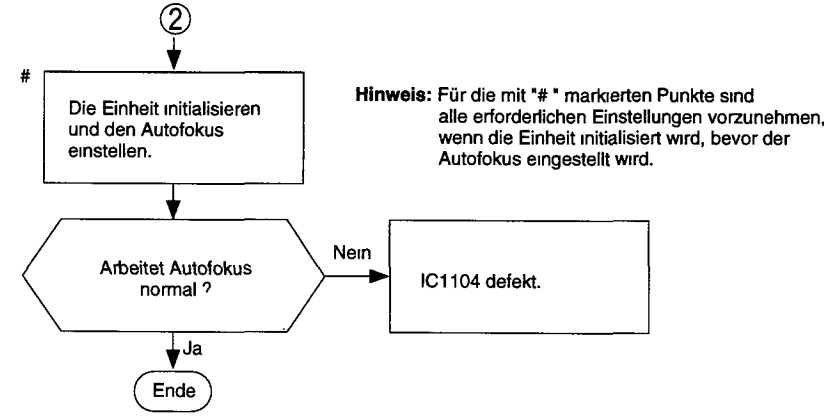



③
TL1305-TL1308: Impulse
In Ordnung
Objektivblock defekt.
Nicht gut
IC1301-3: 3 V
Nicht gut
Die 3 V Leitung überprüfen.
In Ordnung
IC1301-4, 11, 23: 5 V
Nicht gut
Die 5 V Leitung überprüfen.
In Ordnung
TL1325: 12 V
Nicht gut
• C1302 defekt.
• C1303 defekt.
• C1304 defekt.
In Ordnung
IC1301-12, 14: Impulse
Nicht gut
IC1104 defekt.
In Ordnung
IC1301-13, 15: Impulse
Nicht gut
IC1104 defekt.
In Ordnung
IC1301 defekt.


④
Die Anschlüsse des Flachkabels des Objektivs überprüfen.
Nicht gut
Die Anschlüsse des Flachkabels des Objektivs berichtigen.
In Ordnung
TL1313: 3 V
Nicht gut
Die 3 V Leitung überprüfen.
In Ordnung
TL1309: Impuls
Nicht gut
• R1310 defekt.
• R1311 defekt.
• IC1104 defekt.
In Ordnung
Objektivblock defekt.

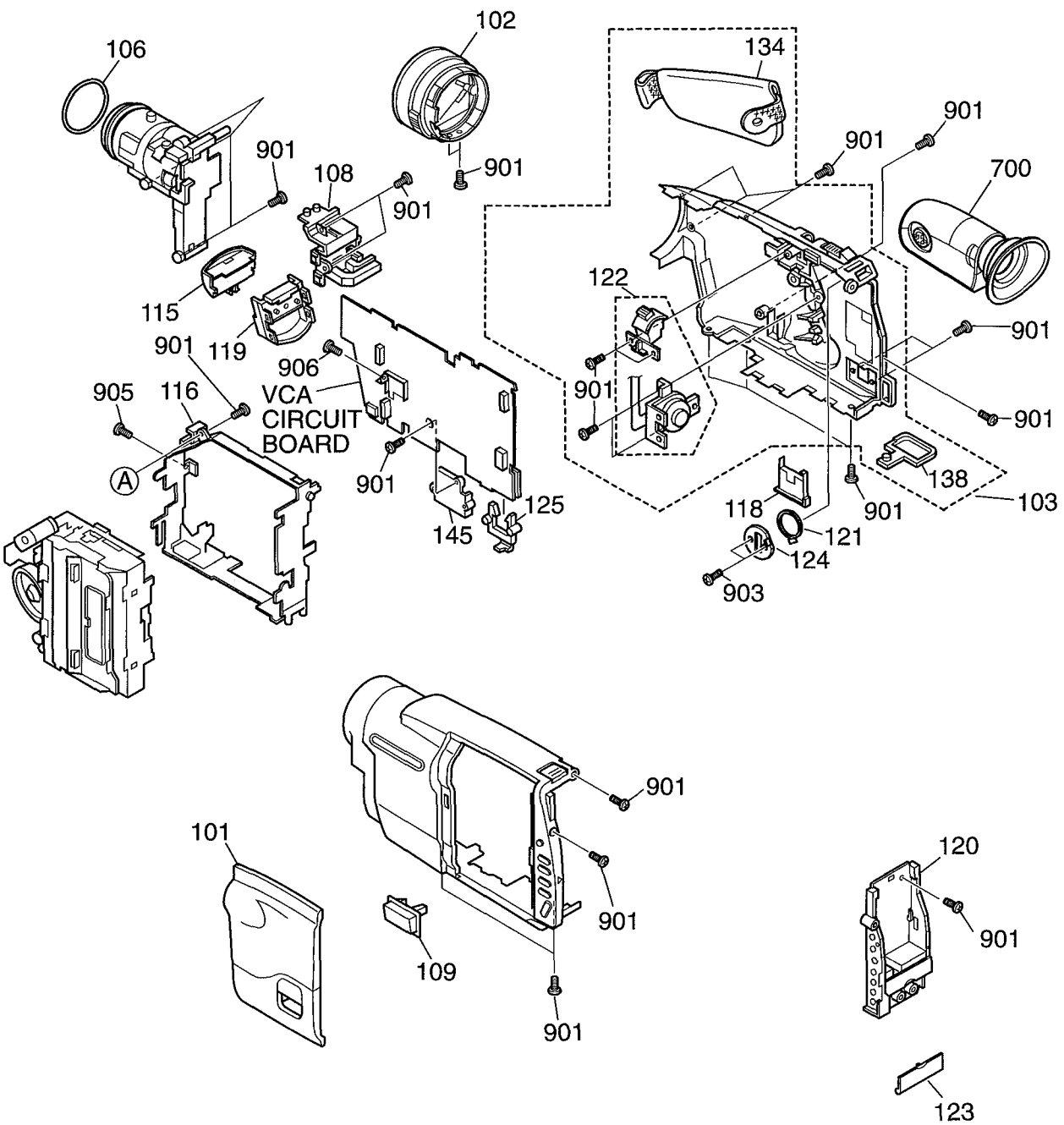
(5) OBJEKT IST SEHR UNSCHARF, WENN GEZOOMT





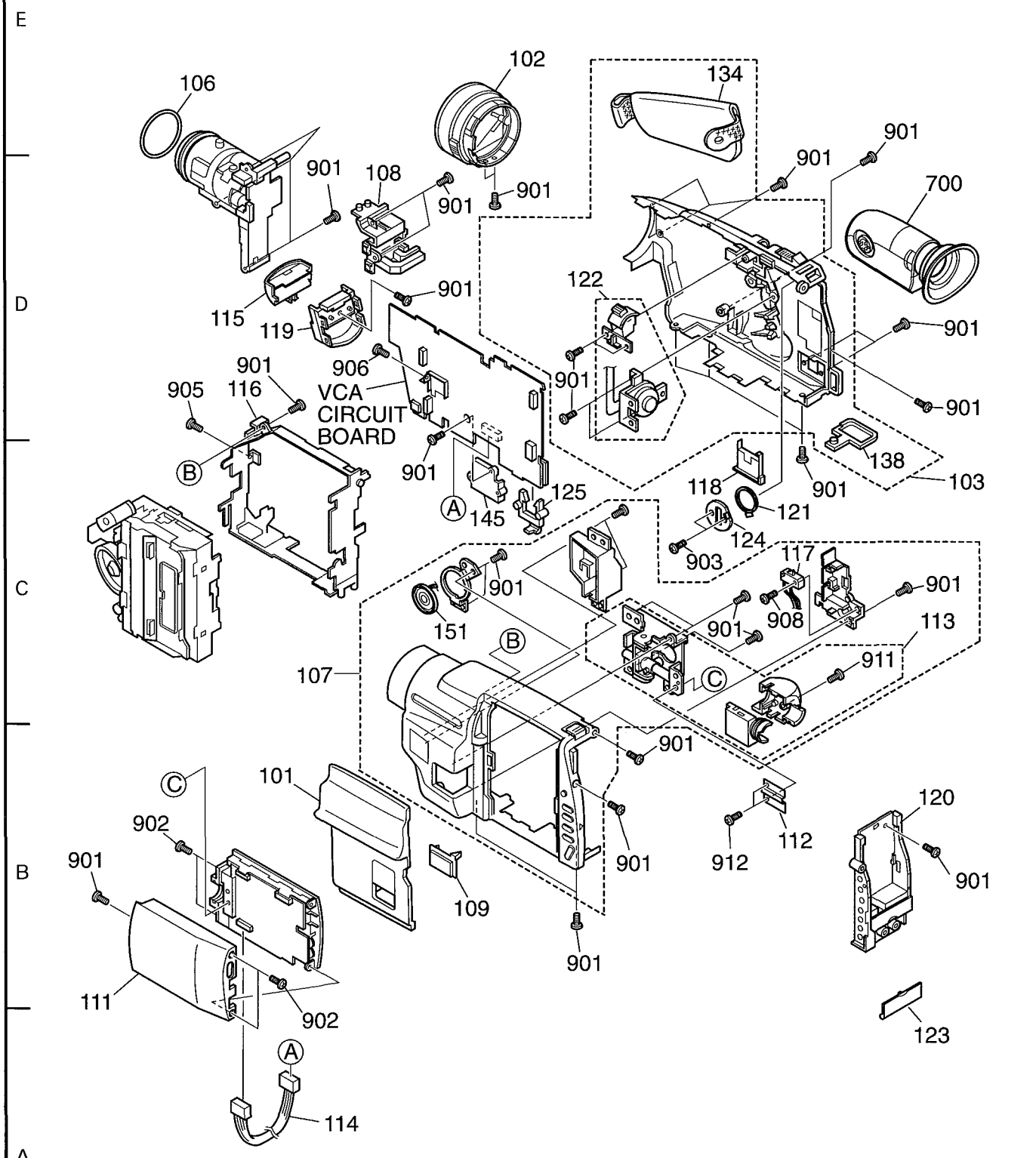
CHAPTER 4 EXPLODED VIEWS

1. CABINET SECTION [TYPE 330, 630]



NOTE: The synthetic resin members that can be dismantled are shown by abbreviations using letters.

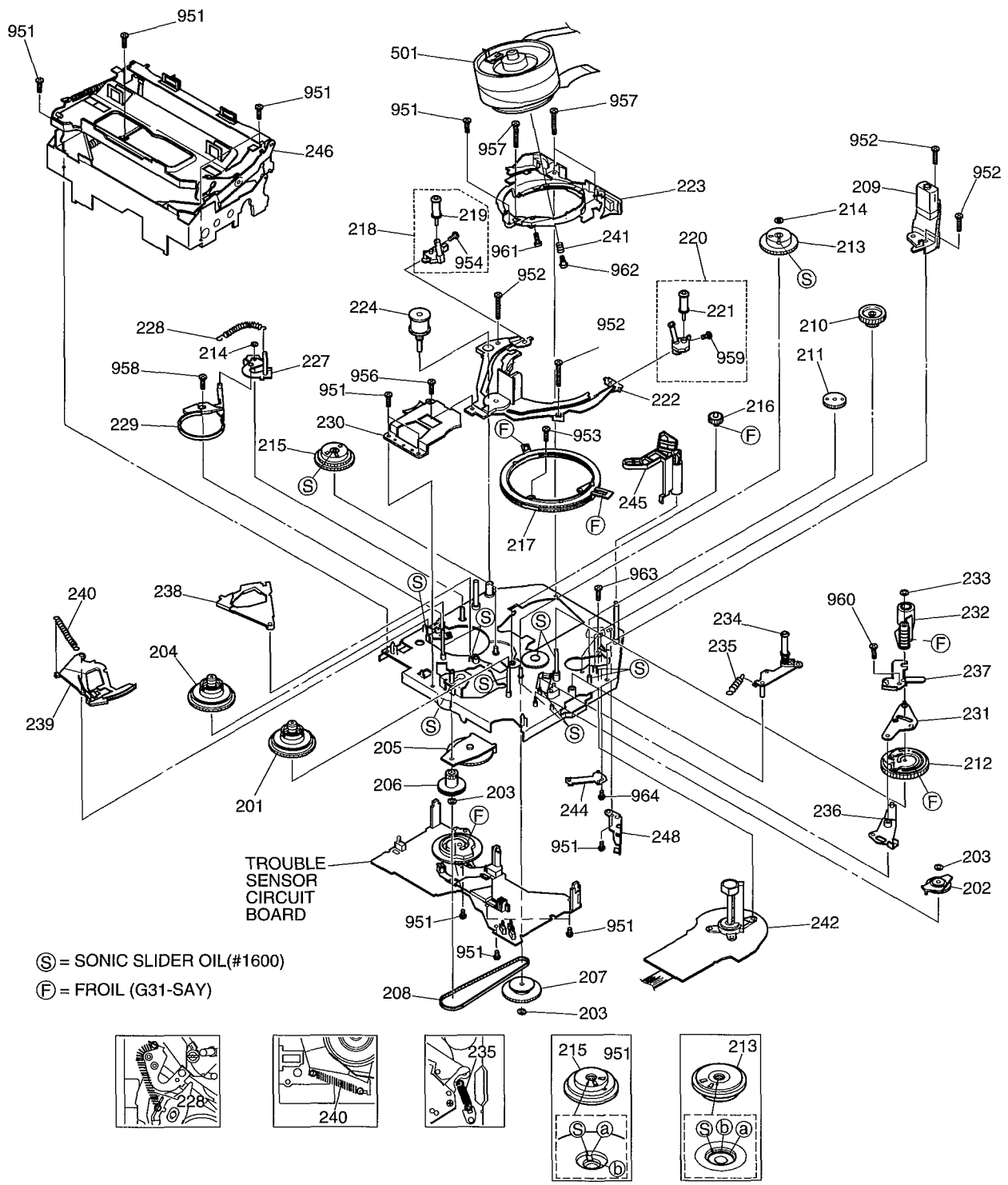
2. CABINET SECTION [TYPE 535, 635, 835]



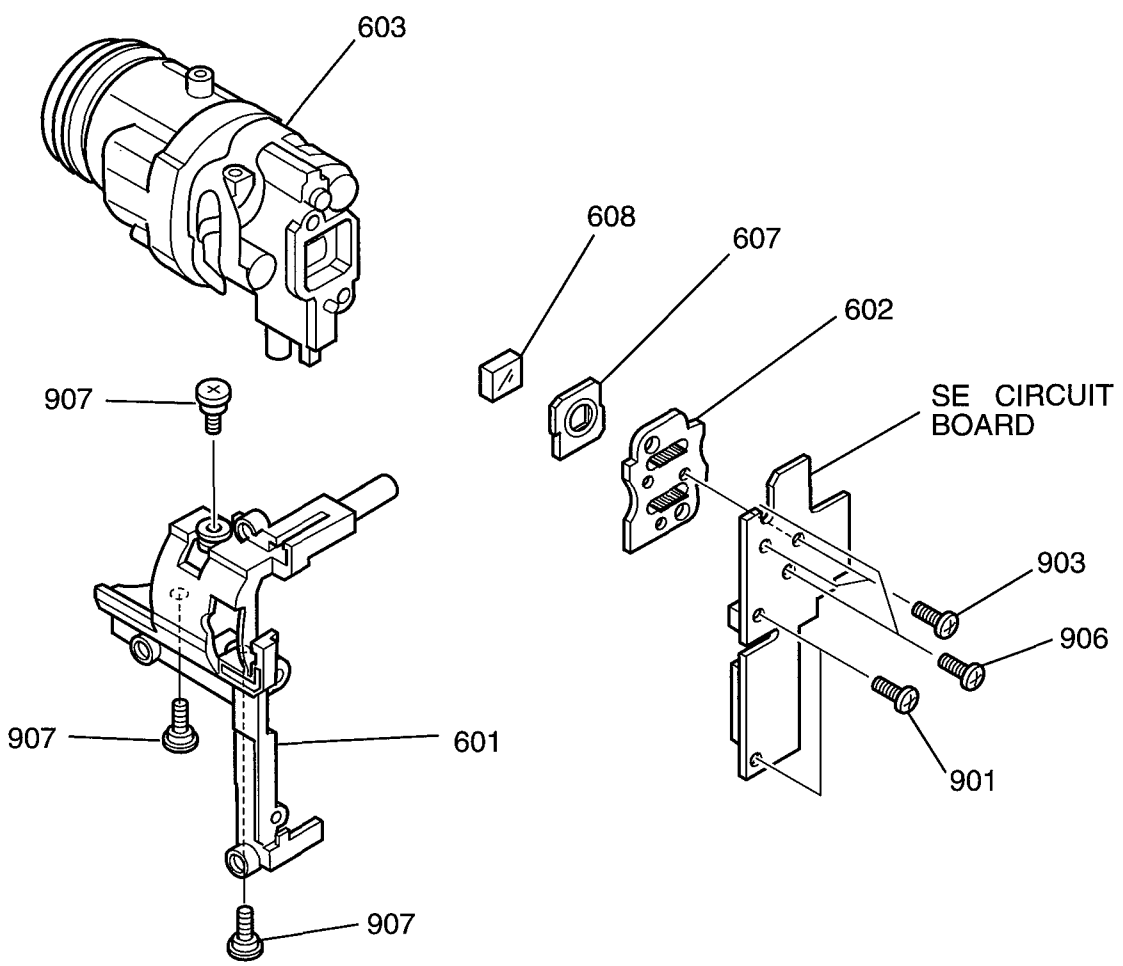
NOTE: The synthetic resin members that can be dismantled are shown by abbreviations using letters.

3. CHASSIS SECTION

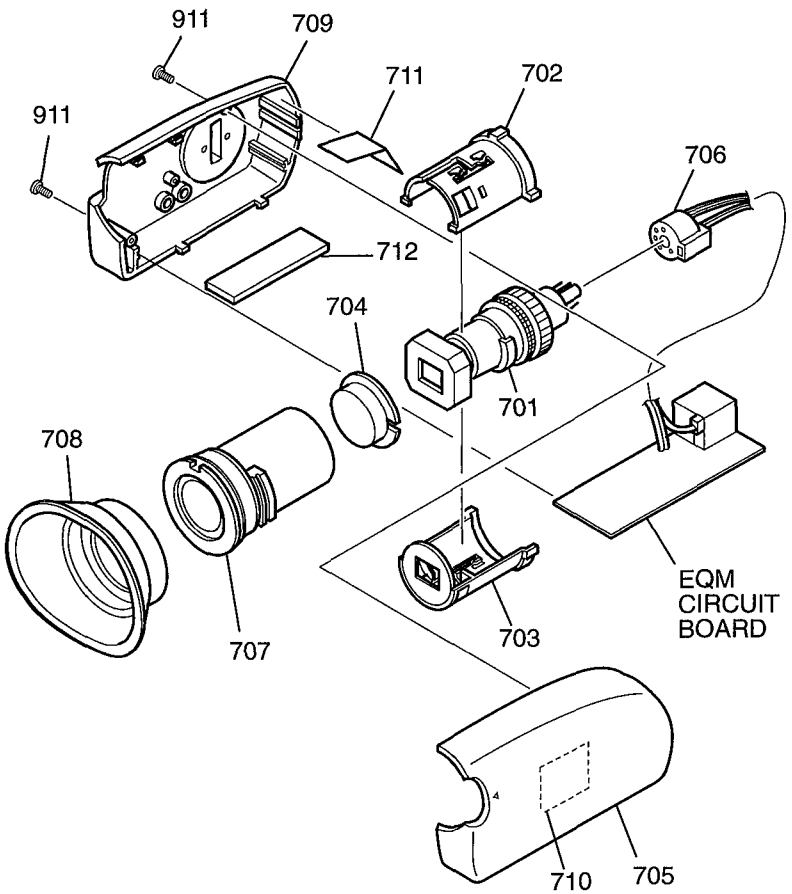
NOTE: If you change the Loading Relay Gears, please use oiler to apply Sonic Slidas oil between ⓐ to ⓑ. If oil is not applied, Loading Relay Gears will be locked.



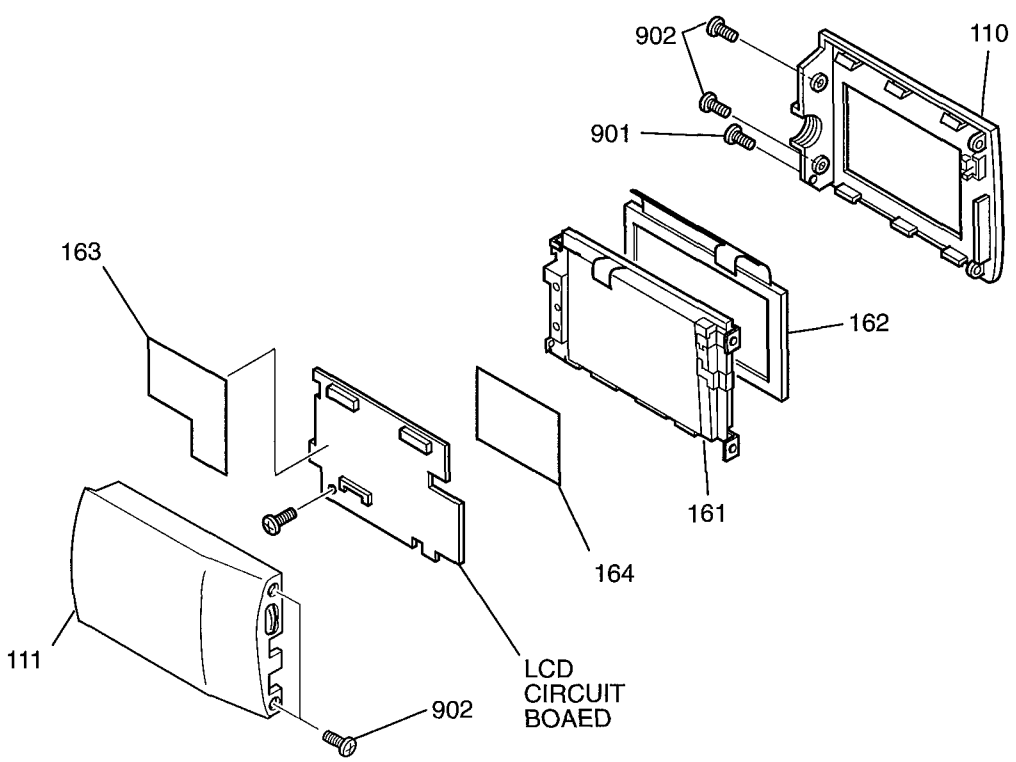
4. CAMRA BLOCK SECTION



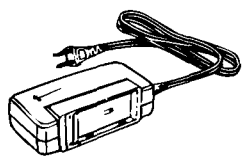
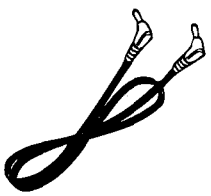
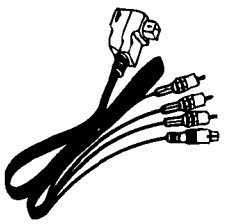
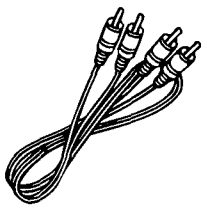
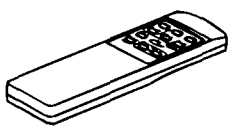
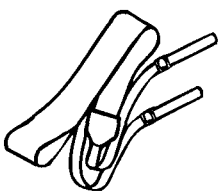
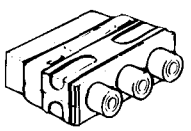
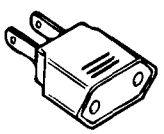
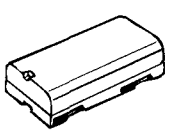
5. ELECTRONIC VIEW FINDER (EVF) SECTION



6. LCD DISPALY SECTION [TYPE 535, 635, 835]



7. ACCESSORIES

⚠ **802**  (VM-ACE3E)	**803** 	**804**[TYPE 630, 835] 	**804**[TYPE 330, 535, 635] 
805  (VM-RME311A)	**807** 	**808** [Except for AU, SW] 	⚠ **809** [For SW] 
⚠ **Battery** 			

CHAPTER 5 REPLACEMENT PARTS LIST

1. MECHANICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION
		MECHANISM SECTION
101	QD15183	LID, CASSETTE (TYPE330)
101	QD15204	LID, CASSETTE (TYPE535)
101	QD15182	LID, CASSETTE (TYPE630)
101	QD15205	LID, CASSETTE (TYPE635)
101	QD15203	LID, CASSETTE (TYPE835)
102	QD15081	RING, LENS (TYE330, 535, 635)
102	QD15082	RING, LENS (TYPE630, 835)
103	FH10353	CASE, SIDE (R)
106	NX11243	RING, O
107	QD15003	CASE, SIDE (L) (TYPE330)
107	QD15014	CASE, SIDE (L) (TYPE535)
107	QD15002	CASE, SIDE (L) (TYPE630)
107	QD15015	CASE, SIDE (L) (TYPE635)
107	QD15013	CASE, SIDE (L) (TYPE835)
108	NJ11331	HOLDER, IR
109	PC13241	BUTTON, LID (TYPE330, 630)
109	PC13251	BUTTON, LID (TYPE535, 635, 835)
110	QD15131	CASE, LCD (B) (TYPE535)
110	QD15132	CASE, LCD (B) (TYPE635)
110	QD15133	CASE, LCD (B) (TYPE835)
111	QD15146	CASE, LCD (U) (TYPE835)
111	QD15147	CASE, LCD (U) (TYPE535)
111	QD15148	CASE, LCD (U) (TYPE635)
112	MN12761	SPACER (TYPE535, 635, 835)
113	NX15051	SUPPORTING BLOCK (TYPE535, 635, 835)
114	EF10277	CONNECTOR (TYPE535, 635, 835)
115	GH10291	MICROPHONE, MONORAL (TYPE330, 535, 635)
115	GH10301	MICROPHONE, STEREO (TYPE630, 835)
116	NT10951	FRAME, MECHA
117	FH10362	SWITCH (TYPE535, 635, 835)
118	QD15282	CASE, BATTERY
119	QD15071	FILTER, IR (TYPE630, 835)
119	QD15072	FILTER, IR (TYPE330, 535, 635)
120	FH10331	SWITCH, REAR UNIT
121	4899872	SPRING
122	FH10371	SWITCH, T/W
123	QX12792	COVER, JACK
124	NA15041	STOPPER
125	NJ11301	HOLDER
134	PV10241	STRAP, HAND
138	QX12801	COVER
145	NX15461	HOLDER, BATTERY
151	GK10251	SPEAKER (TYPE535, 635, 835)
161	DT10191	LIGHT, BACK (TYPE535, 635, 835)
162	DB10471	DISPLAY, LIQUID CRYSTAL (TYPE535, 635, 835)
163	MD12072	SHEET, SHIELD (A) (TYPE535, 635, 835)
164	MD12441	SHEET, SHIELD (B) (TYPE535, 635, 835)
201	6404062	REEL DISK, TAKE-UP
202	6406114	GEAR
203	7787733	WASHER
204	6404073	REEL DISK, SUPPLY
205	6401644	GEAR, IDLER
206	6406211	GEAR
207	KF11411	GEAR, PULLY
208	6358471	BELT
209	KX18142	BLOCK, LOADING
210	6376312	GEAR, DRIVE
211	6406082	GEAR
212	6406242	GEAR
213	6405834	GEAR (R)
214	7787731	WASHER
215	6405824	GEAR (L)
216	6406131	GEAR
217	4588464	RING, LOADING
218	4589354	BAS, GUIDE ROLLER (I)
219	KX10172	ROLLER, GUIDE
220	4589366	BASE, GUIDE ROLLER (O)
221	4588908	ROLLER, GUIDE
222	4587796	PLATE
223	KX15651	BASE, CYLINDER
224	6406157	ROLLER, IMPEDANCE
227	4589015	ARM, TENSION
228	6554231	SPRING
229	4588553	BAND, TENSION
230	6408832	COVER, IDLER
231	NA10601	PLATE
232	4588294	ARM, PRESSURE ROLLER
233	7787571	WASHER
234	4588702	ARM
235	6554201	SPRING
236	KX10731	LEVER
237	4588532	SPRING
238	4588429	PLATE
239	4588353	BRAKE
240	6554221	SPRING
241	6554214	SPRING
242	GP10511	MOTOR, CAPSTAN
244	5794021	BRUSH
245	4588995	COVER
246	KX10761	CASSETTE HOLDER ASSY
248	4827262	BRACKET
501	HX10252	CYLINDER, ASSY (CY-53LN) (TYPE330, 535, 635)
501	HX10254	CYLINDER, ASSY (CY-53L3) (TYPE630, 835)
601	NT10961	FRAME, LENS
602	UE12324	CCD IMAGE SENSOR ASSY (TYPE330, 535)
602	UE12326	CCD IMAGE SENSOR ASSY (TYPE635)
602	UE12327	CCD IMAGE SENSOR ASSY (TYPE630, 835)
603	KQ10521	LENS, ZOOM
607	NX11252	RUBBER
608	DT10141	CRYSTAL (TYPE330, 535)
608	DT10151	CRYSTAL (TYPE630, 635, 835)
700	UX10571	EVF ASSY
⚠701	5319063	CRT
702	4715252	CASE, CRT
703	4715241	CASE, CRT (B)
704	4592241	COVER
705	QD15401	CASE, EVF (R)
706	EF10248	CONNECTOR
707	QD15411	CASE, SLIDE
708	QX11991	CAP, EYE
709	QD15391	CASE, EVF (L)
710	4345001	SPACER
711	4344291	SPACER
712	MN10461	SHEET
901	7775946	SCREW (2X6)
902	7775964	SCREW (2X4) (TYPE535, 635, 835)
903	7775945	SCREW (2X5)
904	7775963	SCREW (2X3)
905	7773891	SCREW
906	8650103	SCREW (2X3)
907	MJ10221	SCREW
908	7775948	SCREW (2X8) (TYPE535, 635, 835)
911	8619003	SCREW 1.7X5
912	8650104	SCREW (TYPE535, 635, 835)
951	8712024	PAN HEAD SCREW-1.4MMDX3MM
952	8700272	SCREW (1.7X5)
953	7775921	SCREW (1.4X2)

2. ELECTRICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION
954	8714004	SCREW(1.4X2.5)
956	8619065	SCREW(1.7X6)
957	8700976	SCREW(1.7X8.0)
958	7770791	SCREW
959	8712904	SCREW(1.4X2.0)
960	8619063	SCREW(1.7X3)
961	8711105	SCREW(2X5)
962	7785886	SCREW
963	8700264	1.7X2 SCREW
964	8741103	SCREW(2X3)
		ACCESSARIES
⚠802	TS13053	AC ADAPTOR (VM-AC3E)(EXCEPT FOR UK,AU)
⚠802	TS13054	AC ADAPTOR (VM-AC3E)(FOR UK)
⚠802	TS13055	AC ADAPTOR (VM-AC3E)(FOR AU)
803	EV10411	CORD,PLUG
804	5856293	AV OUTPUT CORD(TYPE630,835)
804	EW10941	CORD(TYPE330,535,635)
805	HL10771	REMOTE HAND SET(VM-RME311A)
807	TS13691	STRAP,SHOULDER
808	TS12981	AV PLUG ADAPTER(EXCEPT FOR AU,SW)
⚠809	5699421	SOCKT(FOR SW)

SYMBOL NO	P-NO	DESCRIPTION
		CAMERA & VCR SECTION
C0101	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0102	0806174	ELECTROLYTIC 100UF 6.3V
C0103	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0104	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0105	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0106	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0108	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0109	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0110	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0111	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0112	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0113	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0114	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0115	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0116	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0117	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0118	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0119	0893119	CERAMIC CHIP 33PF+-5% 50V
C0120	0893122	CERAMIC CHIP 47PF+-5% 50V
C0121	0893121	CERAMIC CHIP 39PF+-5% 50V
C0122	0806174	ELECTROLYTIC 100UF 6.3V
C0130	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0131	0806168	ELECTROLYTIC 47UF 6.3V
C0132	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0133	0893119	CERAMIC CHIP 33PF+-5% 50V
C0134	0893104	CERAMIC CHIP 2.0PF 50V [TYPE630,835]
C0134	0893119	CERAMIC CHIP 33PF+-5% 50V[EX630,835]
C0136	0893115	CERAMIC CHIP 15PF+-5% 50V
C0137	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0140	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0141	0893133	CERAMIC CHIP 330PF+-5% 50V
C0142	0893123	CERAMIC CHIP 56PF+-5% 50V
C0143	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0144	0893214	CERAMIC CHIP 2700PF+-10% 50V
C0145	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0146	0893108	CERAMIC CHIP 6.0PF+-0.5%50V[TYPE630,835]
C0146	0893115	CERAMIC CHIP 15PF+-5% 50V [EX630,835]
C0147	0893114	CERAMIC CHIP 12PF+-5% 50V
C0148	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0149	0893117	CERAMIC CHIP 22PF+-5% 50V
C0150	0893114	CERAMIC CHIP 12PF+-5% 50V
C0151	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0153	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0154	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0155	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0156	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0159	0893109	CERAMIC CHIP 7.0PF 50V
C0161	0893108	CERAMIC CHIP 6.0PF+-0.5% 50V
C0162	0893116	CERAMIC CHIP 18PF+-5% 50V
C0164	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0165	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0168	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0169	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0170	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0171	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0172	0806153	ELECTROLYTIC 10UF 16V
C0173	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0174	0806133	ELECTROLYTIC 10UF 6V
C0175	0893106	CERAMIC CHIP 4.0PF+-0.25% 50V
C0176	0893127	CERAMIC CHIP 120PF+-5% 50V
C0177	0893116	CERAMIC CHIP 18PF+-5% 50V
C0178	0893208	CERAMIC CHIP 1000PF+-10% 50V

SYMBOL NO	P-NO	DESCRIPTION
C0179	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0180	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0181	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0182	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0183	0806153	ELECTROLYTIC 10UF 16V
C0184	0893067	CERAMIC CHIP 0.1UF+80-20% 25V
C0185	0806024	ELECTROLYTIC 3.3UF 6V
C0187	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0188	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0189	0893125	CERAMIC CHIP 82PF+-5% 50V
C0190	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0191	0893125	CERAMIC CHIP 82PF+-5% 50V
C0192	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0193	0893125	CERAMIC CHIP 82PF+-5% 50V
C0194	0893106	CERAMIC CHIP 4.0PF+-0.25% 50V
C0195	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0201	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0202	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0203	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0204	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0205	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0206	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0207	0893114	CERAMIC CHIP 12PF+-5% 50V
C0208	0893127	CERAMIC CHIP 120PF+-5% 50V
C0209	0893122	CERAMIC CHIP 47PF+-5% 50V
C0210	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0213	0893102	CERAMIC CHIP 1.0PF+-0.25% 50V
C0214	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0215	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0216	0806174	ELECTROLYTIC 100UF 6.3V
C0217	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0218	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0219	0806024	ELECTROLYTIC 3.3UF 6.3V
C0221	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0222	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0223	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0224	0893124	CHIP CERAMIC 68PF+-5% 50V
C0225	AA00352R	CERAMIC CHIP 0.33UF+-10% 16V
C0227	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0228	0893059	CERAMIC CHIP 0.47UF+80-20% 16V
C0229	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0230	0893119	CERAMIC CHIP 33PF+-5% 50V
C0231	0806168	ELECTROLYTIC 47UF 6.3V
C0232	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0235	0893123	CERAMIC CHIP 56PF+-5% 50V
C0237	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0238	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0240	0893115	CERAMIC CHIP 15PF+-5% 50V
C0242	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0243	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0244	0806027	ELECTROLYTIC 4.7UF 4V
C0245	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0246	0806133	ELECTROLYTIC 10UF 6V
C0247	0806027	ELECTROLYTIC 4.7UF 4V
C0249	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0250	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0251	0806027	ELECTROLYTIC 4.7UF 4V
C0252	0806027	ELECTROLYTIC 4.7UF 4V
C0253	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0254	0806133	ELECTROLYTIC 10UF 6V
C0255	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0256	0893126	CERAMIC CHIP 100PF+-5% 50V
C0257	0806174	ELECTROLYTIC 100UF 6.3V
C0258	0893059	CERAMIC CHIP 0.47UF+80-20% 16V
C0259	0893225	CERAMIC CHIP 0.1UF+80-20% 16V

SYMBOL NO	P-NO	DESCRIPTION
C0260	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0261	0893117	CERAMIC CHIP 22PF+-5% 50V
C0262	0893109	CERAMIC CHIP 7.0PF 50V
C0263	0893011	CERAMIC CHIP 0.15UF+-10% 16V
C0264	0893116	CERAMIC CHIP 18PF+-5% 50V
C0265	0893134	CERAMIC CHIP 390PF+-5% 50V
C0266	0893127	CERAMIC CHIP 120PF+-5% 50V
C0267	0893124	CHIP CERAMIC 68PF+-5% 50V
C0270	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0271	0806133	ELECTROLYTIC 10UF 6V
C0272	0893115	CERAMIC CHIP 15PF+-5% 50V
C0301	0893126	CERAMIC CHIP 100PF+-5% 50V
C0302	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0303	0806133	ELECTROLYTIC 10UF 6V
C0304	0893126	CERAMIC CHIP 100PF+-5% 50V
C0305	0893134	CERAMIC CHIP 390PF+-5% 50V
C0306	0806113	ELECTROLYTIC 1UF 25V
C0307	0806113	ELECTROLYTIC 1UF 25V
C0308	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C0310	0893122	CERAMIC CHIP 47PF+-5% 50V
C0312	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0313	0806153	ELECTROLYTIC 10UF 16V
C0314	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0315	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0316	0806153	ELECTROLYTIC 10UF 16V
C0350	0806133	ELECTROLYTIC 10UF 6V
C0351	0806178	ELECTROLYTIC 220UF 4V
C0352	0806178	ELECTROLYTIC 220UF 4V
C0353	0806133	ELECTROLYTIC 10UF 6V
C0354	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0355	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0356	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0357	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0358	0806168	ELECTROLYTIC 47UF 6.3V
C0359	0806027	ELECTROLYTIC 4.7UF 4V
C0360	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0362	0893124	CHIP CERAMIC 68PF+-5% 50V
C0363	0893126	CERAMIC CHIP 100PF+-5% 50V
C0364	0806153	ELECTROLYTIC 10UF 16V
C0365	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0367	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0368	0893131	CERAMIC CHIP 220PF+-5% 50V
C0369	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0391	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0392	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0395	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0401L	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0401R	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0402L	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0402R	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0403L	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0403R	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0404L	0893213	CERAMIC CHIP 2200PF+-10% 50V
C0404R	0893213	CERAMIC CHIP 2200PF+-10% 50V
C0405L	0893211	CERAMIC CHIP 1500PF+-10% 50V
C0405R	0893211	CERAMIC CHIP 1500PF+-10% 50V
C0406L	0806168	ELECTROLYTIC 47UF 6.3V
C0406R	0806168	ELECTROLYTIC 47UF 6.3V
C0407L	AA00362R	CERAMIC CHIP 2.2UF+-10% 16V
C0407R	AA00362R	CERAMIC CHIP 2.2UF+-10% 16V
C0408L	0806027	ELECTROLYTIC 4.7UF 4V
C0408R	0806027	ELECTROLYTIC 4.7UF 4V
C0409L	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0409R	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0410L	0893208	CERAMIC CHIP 1000PF+-10% 50V

SYMBOL NO	P-NO	DESCRIPTION
C0410R	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0411L	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0411R	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0412L	AA00362R	CERAMIC CHIP 2.2UF+-10% 16V
C0412R	AA00362R	CERAMIC CHIP 2.2UF+-10% 16V
C0413	AA00362R	CERAMIC CHIP 2.2UF+-10% 16V
C0415L	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0415R	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0416	0806027	ELECTROLYTIC 4.7UF 4V
C0417L	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0417R	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0418L	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0418R	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0419L	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0419R	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0420	AA00362R	CERAMIC CHIP 2.2UF+-10% 16V
C0421	0893186	CERAMIC CHIP 0.033UF+-10% 16V
C0422	0806133	ELECTROLYTIC 10UF 6V
C0423	0806133	ELECTROLYTIC 10UF 6V
C0424L	0893186	CERAMIC CHIP 0.033UF+-10% 16V
C0424R	0893186	CERAMIC CHIP 0.033UF+-10% 16V
C0425	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0426	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0428	0806168	ELECTROLYTIC 47UF 6.3V
C0430L	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0430R	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0431L	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0431R	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0432	AA00362R	CERAMIC CHIP 2.2UF+-10% 16V
C0439	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0441L	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0441R	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0443	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0445	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0458	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0459	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0460	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0462L	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0462R	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0465	0806168	ELECTROLYTIC 47UF 6.3V
C0466	0806174	ELECTROLYTIC 100UF 6.3V
C0467	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C0473	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0474	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0475L	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0475R	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0476L	0893195	CERAMIC CHIP 0.015UF+-10% 25V
C0476R	0893195	CERAMIC CHIP 0.015UF+-10% 25V
C0477	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0483	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0484L	0893191	CERAMIC CHIP 6800PF+-10% 25V
C0484R	0893191	CERAMIC CHIP 6800PF+-10% 25V
C0501	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0502	0893119	CERAMIC CHIP 33PF+-5% 50V
C0503	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0504	0893119	CERAMIC CHIP 33PF+-5% 50V
C0505	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0507	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C0508	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0509	0893126	CERAMIC CHIP 100PF+-5% 50V
C0510	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0511	0893089	CERAMIC CHIP 0.018UF+-10% 16V
C0513	0893227	CERAMIC CHIP 0.22UF+80-20% 16V
C0514	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0516	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0517	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0518	0893129	CERAMIC CHIP 180PF+-5% 50V
C0519	0893133	CERAMIC CHIP 330PF+-5% 50V
C0520	0893129	CERAMIC CHIP 180PF+-5% 50V
C0521	0893133	CERAMIC CHIP 330PF+-5% 50V
C0522	0893129	CERAMIC CHIP 180PF+-5% 50V
C0523	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0524	0893133	CERAMIC CHIP 330PF+-5% 50V
C0525	0893129	CERAMIC CHIP 180PF+-5% 50V
C0527	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0528	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0529	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0531	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0535	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0537	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0538	0806157	ELECTROLYTIC 22UF 6.3V
C0539	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0540	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0541	AA00335R	CHIP CERAMIC 1.0UF+80-20% 25V
C0542	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0543	AA00335R	CHIP CERAMIC 1.0UF+80-20% 25V
C0544	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0545	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0546	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0547	AD10135R	ELECTROLYTIC 47UF 6.3V
C0548	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0550	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0551	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0552	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0554	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0555	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0556	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0558	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0559	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0560	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C0601	0893205	CERAMIC CHIP 560PF+-10% 50V
C0602	0806027	ELECTROLYTIC 4.7UF 4V
C0603	0893115	CERAMIC CHIP 15PF+-5% 50V
C0604	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0605	0893208	CERAMIC CHIP 1000PF+-10% 50V
C0606	0893204	CERAMIC CHIP 470PF+-10% 50V
C0607	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0608	0893206	CERAMIC CHIP 680PF+-10% 50V
C0609	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0610	0806156	ELECTROLYTIC 22UF 4V
C0611	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0612	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0613	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0614	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C0615	0893205	CERAMIC CHIP 560PF+-10% 50V
C0616	0893115	CERAMIC CHIP 15PF+-5% 50V
C0617	0893215	CERAMIC CHIP 3300PF+-10% 50V
C0618	0893207	CERAMIC CHIP 820PF+-10% 50V
C0619	0893177	CAPACITOR 0.068UF+-10% 16V
C0622	0893123	CERAMIC CHIP 56PF+-5% 50V
C0635	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0636	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0637	0893195	CERAMIC CHIP 0.015UF+-10% 25V
C0638	0893195	CERAMIC CHIP 0.015UF+-10% 25V
C0641	0893226	CERAMIC CHIP 0.15UF+80-20% 16V
C0642	0806153	ELECTROLYTIC 10UF 16V
C0643	0806153	ELECTROLYTIC 10UF 16V
C0645	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0647	0893011	CERAMIC CHIP 0.15UF+-10% 16V
C0648	0893179	CERAMIC CHIP 0.1UF+-10% 16V

SYMBOL NO	P-NO	DESCRIPTION
C0649	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0650	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0651	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0652	0893217	CERAMIC CHIP 4700PF+-10% 50V
C0671	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0672	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C0673	0893213	CERAMIC CHIP 2200PF+-10% 50V
C0691	0893198	CERAMIC CHIP 0.027UF+-10% 25V
C0692	0893195	CERAMIC CHIP 0.015UF+-10% 25V
C0693	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0694	0893197	CERAMIC CHIP 0.022UF+-10% 25V
C0695	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0696	0893191	CERAMIC CHIP 6800PF+-10% 25V
C0902	0806169	ELECTROLYTIC 47UF 16V
C0904	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0905	0806174	ELECTROLYTIC 100UF 6.3V
C0906	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0907	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0908	0806168	ELECTROLYTIC 47UF 6.3V
C0909	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0910	0893188	CERAMIC CHIP 0.047UF+-10% 16V
C0911	0893107	CERAMIC CHIP 5PF+-0.25% 50V
C0912	0893107	CERAMIC CHIP 5PF+-0.25% 50V
C0913	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0914	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0915	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0916	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0917	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0918	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0919	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0923	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C0924	0893119	CERAMIC CHIP 33PF+-5% 50V
C0925	0893125	CERAMIC CHIP 82PF+-5% 50V
C0928	0893117	CERAMIC CHIP 22PF+-5% 50V
C0929	0893117	CERAMIC CHIP 22PF+-5% 50V
C0930	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C0932	0806174	ELECTROLYTIC 100UF 6.3V
C0939	0806168	ELECTROLYTIC 47UF 6.3V
C0942	0806174	ELECTROLYTIC 100UF 6.3V
C0943	0806174	ELECTROLYTIC 100UF 6.3V
C0944	0806174	ELECTROLYTIC 100UF 6.3V
C0999	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1002	0806169	ELECTROLYTIC 47UF 16V
C1003	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C1004	0893211	CERAMIC CHIP 1500PF+-10% 50V
C1005	0806169	ELECTROLYTIC 47UF 16V
C1006	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1007	0893107	CERAMIC CHIP 5PF+-0.25% 50V[EX330,535]
C1007	0893113	CERAMIC CHIP 10PF+-0.5% 50V[TYPE330,535]
C1008	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1009	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1010	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1101	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1102	0806178	ELECTROLYTIC 220UF 4V
C1103	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1104	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1105	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1106	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1108	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1109	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1110	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1111	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1112	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C1113	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1114	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C1115	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1116	0893117	CERAMIC CHIP 22PF+-5% 50V[EXCEPT635]
C1116	0893121	CERAMIC CHIP 39PF+-5% 50V[TYPE635]
C1119	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1120	0893124	CHIP CERAMIC 68PF+-5% 50V
C1121	0893125	CERAMIC CHIP 82PF+-5% 50V
C1122	0202319	CERAMIC CHIP 22PF+-2% 50V
C1123	0806168	ELECTROLYTIC 47UF 6.3V
C1125	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1126	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1127	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1128	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1129	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1131	0893114	CERAMIC CHIP 12PF+-5% 50V
C1132	0806168	ELECTROLYTIC 47UF 6.3V
C1134	0893067	CERAMIC CHIP 0.1UF+80-20% 25V
C1135	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1136	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1139	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1141	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1142	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1143	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1144	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1145	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1146	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1147	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1148	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1149	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1150	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1151	0893067	CERAMIC CHIP 0.1UF+80-20% 25V
C1152	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1155	0893014	CERAMIC CHIP 0.01UF+-10% 25V
C1156	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1157	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1158	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1161	0806174	ELECTROLYTIC 100UF 6.3V
C1168	0806178	ELECTROLYTIC 220UF 4V
C1169	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1201	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1202	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1203	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1204	0893132	CERAMIC CHIP 270PF+-5% 50V
C1205	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1206	0893007	CERAMIC CHIP 0.082UF+-10% 16V
C1207	0202327	CERAMIC CHIP 0.22UF+-10% 16V
C1208	0893113	CERAMIC CHIP 10PF+-0.5% 50V
C1209	0893133	CERAMIC CHIP 330PF+-5% 50V
C1210	0893133	CERAMIC CHIP 330PF+-5% 50V
C1211	0893133	CERAMIC CHIP 330PF+-5% 50V
C1212	0893067	CERAMIC CHIP 0.1UF+80-20% 25V
C1213	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1301	0806186	ELECTROLYTIC 220UF 6.3V
C1302	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1303	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1304	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1305	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1311	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1312	0893062	CERAMIC CHIP 1UF+80-20% 16V
C1313	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1314	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1403	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1404	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1405	0806157	ELECTROLYTIC 22UF 6.3V
C1406	0806157	ELECTROLYTIC 22UF 6.3V
C1407	0893244	CERAMIC CHIP 0.012UF+-10% 50V

SYMBOL NO	P-NO	DESCRIPTION
C1408	0893244	CERAMIC CHIP 0.012UF+-10% 50V
C1409	0893244	CERAMIC CHIP 0.012UF+-10% 50V
C1410	0893244	CERAMIC CHIP 0.012UF+-10% 50V
C1411	0206647	ELECTROLYTIC 10UF 10V
C1412	0206647	ELECTROLYTIC 10UF 10V
C1413	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1414	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C1415	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C1417	0806157	ELECTROLYTIC 22UF 6.3V
C1418	0893225	CERAMIC CHIP 0.1UF+80-20% 16V
C5304	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C5305	0893173	CERAMIC CHIP 680PF+-5% 50V
C5306	0806133	ELECTROLYTIC 10UF 6V
C5308	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5309	0893246	CERAMIC CHIP 0.047UF+80-20% 50V
C5310	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C5312	0806113	ELECTROLYTIC 1UF 25V
C5313	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5314	0893111	CERAMIC CHIP 8PF+-0.5% 50V
C5315	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5316	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5317	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5318	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5319	AD10263R	ELECTROLYTIC 10UF 10V
C5320	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5321	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5322	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5323	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5324	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5325	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5326	0893191	CERAMIC CHIP 6800PF+-10% 25V
C5327	0806024	ELECTROLYTIC 3.3UF 6.3V
C5328	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5329	0893118	CERAMIC CHIP 27PF+-5% 50V
C5330	0893173	CERAMIC CHIP 680PF+-5% 50V
C5331	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5332	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5333	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5334	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5335	0893125	CERAMIC CHIP 82PF+-5% 50V
C5336	AA00802R	CERAMIC CHIP 10UF+80-20% 16V
C5337	0806129	ELECTROLYTIC 22UF 10V
C5338	0806129	ELECTROLYTIC 22UF 10V
C5340	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5341	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5401	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5402	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5403	0806133	ELECTROLYTIC 10UF 6V
C5404	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5405	0806122	ELECTROLYTIC 6.8UF 6.3V
C5406	0893095	CERAMIC CHIP 0.33UF+-10% 16V
C5407	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5408	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5409	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5410	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5411	AD10275R	ELECTROLYTIC 10UF 20V
C5412	0893116	CERAMIC CHIP 18PF+-5% 50V
C5413	0893127	CERAMIC CHIP 120PF+-5% 50V
C5414	0893208	CERAMIC CHIP 1000PF+-10% 50V
C5415	0806131	CHIP CAPACITOR 2.2UF+-20% 20V
C5416	0893232	CERAMIC CHIP 0.1UF+80-20% 25V
C5417	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5418	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5419	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C5420	0893093	CERAMIC CHIP 2.2UF+80-20% 16V

SYMBOL NO	P-NO	DESCRIPTION
C5421	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5422	AD10275R	ELECTROLYTIC 10UF 20V
C5501	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C5502	0893093	CERAMIC CHIP 2.2UF+80-20% 16V
C5503	0806122	ELECTROLYTIC 68UF 6.3V
C5504	0893184	CERAMIC CHIP 0.022UF+-10% 16V
C5505	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5506	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C5507	0806129	ELECTROLYTIC 22UF 10V
C5508	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C5509	0893116	CERAMIC CHIP 18PF+-5% 50V
C5510	0893118	CERAMIC CHIP 27PF+-5% 50V
C5511	AD10276R	ELECTROLYTIC 33UF 10V
C5512	0202328	CERAMIC CHIP 1.0UF+80-20% 16V
C5513	AF10112R	CAPACITOR 0.01UF+-5% 50V
C5514	AA10644R	CERAMIC CHIP 12PF+-5% 3KV
C5515	AF10112R	CAPACITOR 0.01UF+-5% 50V
C5516	AF10112R	CAPACITOR 0.01UF+-5% 50V
C5517	AF10112R	CAPACITOR 0.01UF+-5% 50V
C5601	0893131	CERAMIC CHIP 220PF+-5% 50V
C5602	0893168	CERAMIC CHIP 330PF+-5% 50V
C5603	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5604	0806133	ELECTROLYTIC 10UF 6V
C5605	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C5606	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5607	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5608	AD10256R	ELECTROLYTIC 3.3UF 20V
C5609	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5610	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C5611	0893208	CERAMIC CHIP 1000PF+-10% 50V
C5612	0893125	CERAMIC CHIP 82PF+-5% 50V
C5613	0893179	CERAMIC CHIP 0.1UF+-10% 16V
C5614	0893172	CERAMIC CHIP 560PF+-5% 50V
C5615	0806113	ELECTROLYTIC 1UF 25V
C5616	0806113	ELECTROLYTIC 1UF 25V
C5617	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5619	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5620	AD10274R	ELECTROLYTIC 6.8UF 20V
C5621	0893193	CERAMIC CHIP 0.01UF+-10% 25V
C5622	0893179	CERAMIC CHIP 0.1UF+-10% 16V
R0010	0103930	CHIP RESISTOR 390OHM+-5% 1/8W
R0011	0103838	RESISTOR CHIP 390OHM+-5% 0.1W
R0101	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0102	0790007	CHIP RESISTOR 5.6 OHM+-5% 1/16W
R0103	0790007	CHIP RESISTOR 5.6 OHM+-5% 1/16W
R0104	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0105	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0106	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0107	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0108	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0109	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0110	0790076	CHIP RESISTOR 820KOHM+-5% 1/16W
R0111	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0112	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R0113	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0114	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0115	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0116	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0119	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0120	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0121	0790008	CHIP RESISTOR 6.8 OHM+-5% 1/16W
R0122	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0123	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0124	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0125	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0126	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0127	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0128	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0129	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0130	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0132	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0134	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0137	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0138	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W [TYPE630,835]
R0138	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W [TYPE330,535,635]
R0141	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
R0142	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0143	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W [TYPE330,535,635]
R0143	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W [TYPE630,835]
R0144	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0145	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0146	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W [TYPE630,835]
R0146	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W [TYPE330,535,635]
R0147	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R0148	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0149	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0150	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0151	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0152	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0153	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0154	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0156	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0157	AQ00205R	CHIP RESISTOR 2.7KOHM+-1% 1/16W
R0158	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0159	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0160	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W [TYPE330,535,635]
R0160	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W [TYPE630,835]
R0161	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R0162	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0163	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0164	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0165	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0167	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0168	0790065	CHIP RESISTOR 120KOHM+-5% 1/16W
R0170	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0171	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R0172	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R0173	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0174	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0175	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0176	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W [TYPE630,835]
R0176	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W [TYPE330,535,635]
R0179	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
R0180	0790025	CHIP RESISTOR 120 OHM+-5% 1/16W
R0181	0790063	CHIP RESISTOR 82KOHM+-5% 1/16W
R0182	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0183	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W [TYPE330,535,635]
R0183	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W [TYPE630,835]

SYMBOL NO	P-NO	DESCRIPTION
R0184	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0185	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0186	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0187	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0188	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0190	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0191	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0192	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W
R0193	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0194	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0196	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0198	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0199	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0201	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0202	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0203	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0205	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0207	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0208	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W [TYPE330,535,635]
R0208	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W [TYPE630,835]
R0209	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0212	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0213	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0215	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0216	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0217	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0218	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0219	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0222	0790072	CHIP RESISTOR 390KOHM+-5% 1/16W
R0223	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0224	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0228	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R0230	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0231	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0237	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0238	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0239	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0240	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0241	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0243	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R0244	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0245	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0246	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0247	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0248	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0250	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0251	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0252	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0253	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0254	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0255	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0257	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0258	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0259	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0260	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0261	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0265	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0267	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W [TYPE630,835]
R0267	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W [TYPE330,535,635]
R0268	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0270	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0271	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0272	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0273	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R0274	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0275	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0276	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0278	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0280	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0281	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0292	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0293	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0294	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0295	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R0296	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0298	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0299	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0302	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0303	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0305	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0310	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0311	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0313	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0314	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0316	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0317	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0318	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W
R0319	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0324	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0325	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0326	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0327	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0328	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0330	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0333	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0334	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0335	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0336	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0339	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0340	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0341	0790029	CHIP RESISTOR 270 OHM+-5% 1/16W
R0342	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0343	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0344	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0346	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0347	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0350	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0351	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0354	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0355	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0356	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0357	AQ00203R	CHIP RESISTOR 2.2KOHM+-1% 1/16W
R0359	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0364	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0366	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0371	0790066	CHIP RESISTOR 150KOHM+-5% 1/16W
R0373	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0374	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0382	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0383	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0384	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0390	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0391	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0397	0104093	CHIP RESSISTOR 75 OHM+-5% 1/16W
R0399	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0401L	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0401R	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0402L	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0402R	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0403L	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0403R	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0405	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0408	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0410	0104121	CHIP RESISTOR 27KOHM+-1% 1/10W
R0412	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0413L	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0413R	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0415	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0417L	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0417R	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0418L	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
		[TYPE330,535,635]
R0418L	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
		[TYPE630,835]
R0418R	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0419L	0790025	CHIP RESISTOR 120 OHM+-5% 1/16W
		[TYPE630,835]
R0419L	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
		[TYPE330,535,635]
R0419R	0790025	CHIP RESISTOR 120 OHM+-5% 1/16W
R0420L	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0420R	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0421L	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0421R	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0428	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0429L	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0429R	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0435	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0436L	0790066	CHIP RESISTOR 150KOHM+-5% 1/16W
R0436R	0790066	CHIP RESISTOR 150KOHM+-5% 1/16W
R0445	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0447	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0464	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0466	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R0467	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R0468	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0469	0790073	CHIP RESISTOR 470KOHM+-5% 1/16W
R0470	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0473	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0474	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0477	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0479	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W
R0480	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0481	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0482	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0484	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0485	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0486	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0487	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0488L	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0488R	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0489L	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0489R	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0490L	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0490R	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0491L	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0491R	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0492L	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0492R	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0493L	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0493R	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0494L	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0494R	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0496L	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0496R	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0497L	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0497R	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R0501	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0502	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0504	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0505	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0506	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0507	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0508	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0510	0104269	CHIP RESISTOR 43KOHM+-1% 1/10W
R0511	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0512	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0513	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0514	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0516	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0517	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0518	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0519	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0522	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0525	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0529	AQ00211R	CHIP RESISTOR 4.3KOHM+-1% 1/16W
R0530	0893039	CERAMIC CHIP 4700PF+-10% 50V
R0531	0104292	CHIP RESISTOR 1.0KOHM+-0.5% 1/16W
R0532	0104301	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0533	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0534	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R0538	0893208	CERAMIC CHIP 1000PF+-10% 50V
R0539	0104297	CHIP RESISTOR 10KOHM+-0.5% 16V
R0540	0104292	CHIP RESISTOR 1.0KOHM+-0.5% 1/16W
R0541	0104301	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0545	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0546	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0549	0790076	CHIP RESISTOR 820KOHM+-5% 1/16W
R0550	AQ10274R	CHIP RESISTOR 46.4KOHM+-0.5% 1/16W
R0551	AQ10273R	CHIP RESISTOR 680 OHM+-0.5% 1/16W
R0552	0104301	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0555	0790067	CHIP RESISTOR 180KOHM+-5% 1/16W
R0556	0104303	CHIP RESISTOR 12KOHM+-0.5% 1/16W
R0558	0104301	CHIP RESISTOR 4.7KOHM+-0.5% 1/16W
R0561	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R0562	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0566	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0567	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0583	0790023	CHIP RESISTOR 82 OHM+-5% 1/16W
R0601	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0602	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0603	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0606	AQ00223R	CHIP RESISTOR 12KOHM+-1% 1/16W
R0607	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0608	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0609	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R0610	AQ00223R	CHIP RESISTOR 12KOHM+-1% 1/16W
R0611	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0612	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0613	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0614	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0616	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0619	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0620	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0621	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R0622	0790043	CHIP RESISTOR 2.7KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0623	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0624	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0628	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0640	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0641	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0642	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0643	0105815	CHIP RESISTOR 0.47 OHM+-10% 1/4W
R0644	0105815	CHIP RESISTOR 0.47 OHM+-10% 1/4W
R0662	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0663	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0671	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0672	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R0681	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0682	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0691	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0692	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0693	0790041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R0694	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0695	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0696	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0701	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0702	0790058	CHIP RESISTOR 39KOHM+-5% 1/16W
R0703	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0704	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0705	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0706	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0707	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0708	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R0714	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0718	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0721	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0722	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0723	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R0724	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R0725	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R0728	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R0729	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0733	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0739	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0740	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0741	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0743	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0744	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0746	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0751	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0752	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0753	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0754	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0755	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0901	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0903	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R0904	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0905	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0906	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0907	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0908	0790066	CHIP RESISTOR 150KOHM+-5% 1/16W
R0909	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R0912	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0913	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0914	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0915	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0916	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0917	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0918	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0919	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0920	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0921	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0922	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0923	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0924	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0925	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0926	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0927	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0928	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0929	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0930	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0931	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0932	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0933	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0934	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R0935	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0936	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0938	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0941	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0942	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0943	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0944	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R0945	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0947	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0948	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0949	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0950	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0951	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0952	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0953	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0954	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0955	AQ00221R	CHIP RESISTOR 10KOHM+-1% 1/16W
R0957	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R0958	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0961	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0962	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0963	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W [TYPE535,635,835]
R0963	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W [TYPE330,630]
R0964	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0966	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R0969	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0970	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0971	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R0972	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0974	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0975	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0976	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0977	0790017	CHIP RESISTOR 33 OHM+-5% 1/16W
R0978	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0979	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0980	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0981	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R0982	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0983	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R0984	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0985	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R0986	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0987	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R0991	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R0992	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R0994	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R0995	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0996	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R0997	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R0998	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R0999	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1001	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1002	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1003	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1006	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1009	0103823	CHIP RESISTOR 22OHM+-5% 0.1W
R1101	AQ00231R	CHIP RESISTOR 24KOHM+-1% 1/16W
R1112	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1113	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R1114	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R1115	0790012	CHIP RESISTOR 12 OHM+-5% 1/16
R1116	0790012	CHIP RESISTOR 12 OHM+-5% 1/16
R1117	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1118	BM00137R	FILTER[TYPE330,535]
R1118	BM00138R	FILTER[TYPE630,635,835]
R1119	BM00137R	FILTER
R1120	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1121	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R1122	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1123	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R1124	AQ00212R	CHIP RESISTOR 4.7KOHM+-1% 1/16W
R1126	AQ00208R	CHIP RESISTOR 3.6KOHM+-1% 1/16W
R1128	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R1129	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1130	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1131	0104545	CHIP RESISTOR 1.24KOHM+-1% 1/16W
R1132	0790038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R1133	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1136	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R1137	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1142	0790033	CHIP RESISTOR 470 OHM+-5% 1/16W
R1143	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1145	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1146	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1147	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R1148	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R1149	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1150	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1155	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1156	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1157	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1158	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1159	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1160	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1161	0790054	CHIP RESISTOR 18KOHM+-5% 1/16W
R1162	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R1163	0790063	CHIP RESISTOR 82KOHM+-5% 1/16W
R1169	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1170	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1175	AQ00194R	CHIP RESISTOR 1.0KOHM+-1% 1/16W
R1201	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R1202	0790069	CHIP RESISTOR 0.27MOHM+-5% 1/16W
R1203	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1204	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1205	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1206	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1207	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1208	0790071	CHIP RESISTOR 330KOHM+-5% 1/16W
R1209	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R1210	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1211	0790071	CHIP RESISTOR 330KOHM+-5% 1/16W
R1212	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R1213	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R1214	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1215	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1216	AQ00231R	CHIP RESISTOR 24KOHM+-1% 1/16W
R1218	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R1220	0790031	CHIP RESISTOR 330 OHM+-5% 1/16W
R1221	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1222	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1223	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1225	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R1226	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1303	AQ00223R	CHIP RESISTOR 12KOHM+-1% 1/16W
R1308	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1309	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1310	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1311	0790032	CHIP RESISTOR 390 OHM+-5% 1/16W
R1312	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R1313	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R1314	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1315	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1403	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1404	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1405	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1406	0790044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1407	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1408	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R1409	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1410	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1411	0790067	CHIP RESISTOR 180KOHM+-5% 1/16W
R1412	0790067	CHIP RESISTOR 180KOHM+-5% 1/16W
R1413	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1414	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1416	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5301	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R5302	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R5303	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R5304	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R5307	AQ00236R	CHIP RESISTOR 39KOHM+-1% 1/16W
R5308	AQ00232R	CHIP RESISTOR 27KOHM+-1% 1/16W
R5309	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R5310	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R5313	0790047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R5314	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R5315	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R5316	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R5317	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R5318	0790024	CHIP RESISTOR 100 OHM+-5% 1/16W
R5319	AQ00227R	CHIP RESISTOR 18KOHM+-1% 1/16W
R5320	AQ00234R	CHIP RESISTOR 33KOHM+-1% 1/16W
R5323	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5324	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R5325	AQ00232R	CHIP RESISTOR 27KOHM+-1% 1/16W
R5326	AQ00238R	CHIP RESISTOR 47KOHM+-1% 1/16W
R5327	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R5328	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R5329	0790045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R5330	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R5331	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R5332	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R5333	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R5334	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R5336	0105203	CHIP RESISTOR 18KOHM+-0.5% 1/16W
R5338	0790071	CHIP RESISTOR 330KOHM+-5% 1/16W
R5339	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R5340	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R5341	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R5342	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R5343	0104256	CHIP RESISTOR 10MOHM+-5% 1/10W
R5344	0790061	CHIP RESISTOR 56KOHM+-5% 1/16W
R5345	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5346	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R5347	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R5349	0790048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R5351	0790075	CHIP RESISTOR 680KOHM+-5% 1/16W
R5357	0790067	CHIP RESISTOR 180KOHM+-5% 1/16W
R5401	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R5402	0790068	CHIP RESISTOR 220KOHM+-5% 1/16W
R5404	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5405	AQ10634R	CHIP RESISTOR 120KOHM+-0.5% 1/16W
R5406	0105197	CHIP RESISTOR 22KOHM+-0.5% 1/16W
R5407	0104727	CHIP RESISTOR 15KOHM+-1% 1/16W
R5408	0790049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R5409	AQ10632R	CHIP RESISTOR 33KOHM+-0.5% 1/16W
R5410	0790053	CHIP RESISTOR 15KOHM+-5% 1/16W
R5411	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R5412	0105213	CHIP RESISTOR 5.6KOHM+-0.5% 1/16W
R5413	0105215	CHIP RESISTOR 47KOHM+-5% 1/16W
R5414	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R5415	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R5416	0790035	CHIP RESISTOR 680 OHM+-5% 1/16W
R5417	0104251	CHIP RESISTOR 2.2 OHM+-5% 1/10W
R5420	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5501	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5502	AQ10634R	CHIP RESISTOR 120KOHM+-0.5% 1/16W
R5503	AQ10631R	CHIP RESISTOR 27KOHM+-0.5% 1/16W
R5504	0105196	CHIP RESISTOR 6.8KOHM+-0.5% 1/16W
R5505	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5506	0105193	CHIP RESISTOR 1.8KOHM+-0.5% 1/16W
R5507	0105209	CHIP RESISTOR 3.3KOHM+-0.5% 1/16W
R5508	0105196	CHIP RESISTOR 6.8KOHM+-0.5% 1/16W
R5509	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R5510	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5511	0790039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R5512	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5513	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R5514	0790036	CHIP RESISTOR 820 OHM+-5% 1/16W
R5515	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R5518	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5519	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R5521	0790025	CHIP RESISTOR 120 OHM+-5% 1/16W
R5522	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R5523	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R5524	0790034	CHIP RESISTOR 560 OHM+-5% 1/16W
R5525	0105572	METAL FILM RESISTOR 2.7KOHM+-1% 1/10W
R5526	0105572	METAL FILM RESISTOR 2.7KOHM+-1% 1/10W
R5527	AQ00203R	CHIP RESISTOR 2.2KOHM+-1% 1/16W
R5528	AQ00203R	CHIP RESISTOR 2.2KOHM+-1% 1/16W
R5529	AQ00181R	CHIP RESISTOR 330 OHM+-1% 1/16W
R5601	0790063	CHIP RESISTOR 82KOHM+-5% 1/16W
R5602	0790063	CHIP RESISTOR 82KOHM+-5% 1/16W
R5603	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5604	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5605	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5606	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5607	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R5609	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5610	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5611	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R5612	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R5613	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5614	0790056	CHIP RESISTOR 27KOHM+-5% 1/16W

SYMBOL NO	P-NO	DESCRIPTION
R5615	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R5616	0790066	CHIP RESISTOR 150KOHM+-5% 1/16W
R5617	0790052	CHIP RESISTOR 12KOHM+-5% 1/16W
R5618	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5619	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R5620	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R5621	0790064	CHIP RESISTOR 100KOHM+-5% 1/16W
R5622	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R5623	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5624	0790077	CHIP RESISTOR 1MOHM+-5% 1/16W
R5625	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R5626	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R5627	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R5628	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5629	0790046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R5630	0790062	CHIP RESISTOR 68KOHM+-5% 1/16W
R5631	AQ10635R	CHIP RESISTOR 270KOHM+-5% 1/16W
R5632	0790057	CHIP RESISTOR 33KOHM+-5% 1/16W
R5633	AQ10633R	CHIP RESISTOR 56KOHM+-0.5% 1/16W
R5634	0105215	CHIP RESISTOR 47KOHM+-5% 1/16W
R5635	0104721	CHIP RESISTOR 100KOHM+-0.5% 1/16W
R5636	0790002	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R5637	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R5638	AQ10632R	CHIP RESISTOR 33KOHM+-0.5% 1/16W
R5639	0105197	CHIP RESISTOR 22KOHM+-0.5% 1/16W
R5642	AQ10632R	CHIP RESISTOR 33KOHM+-0.5% 1/16W
R5643	0105197	CHIP RESISTOR 22KOHM+-0.5% 1/16W
R5644	0790055	CHIP RESISTOR 22KOHM+-5% 1/16W
R5645	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R5646	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5647	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R5648	0790037	CHIP RESISTOR 1KOHM+-5% 1/16W
R5649	0790051	CHIP RESISTOR 10KOHM+-5% 1/16W
R5708	0790028	CHIP RESISTOR 220 OHM+-5% 1/16W
R5710	0790042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R5711	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R5712	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
R5713	0790059	CHIP RESISTOR 47KOHM+-5% 1/16W
RT0103	5040201	VARIABLE RESISTOR 470 OHM
RT0202	5040205	VARIABLE RESISTOR 4.7KOHM
RT0203	5040205	VARIABLE RESISTOR 4.7KOHM
RT0204	0104171	CHIP RESISTOR 10KOHM+-10% 1/8W
RT0205	5040204	VARIABLE RESISTOR 10KOHM
RT0206	0104159	CHIP RESISTER 1.5KOHM+-10% 1/8W
RT0207	5040205	VARIABLE RESISTOR 4.7KOHM
RT0209	5040205	VARIABLE RESISTOR 4.7KOHM
RT0210	5040201	VARIABLE RESISTOR 470 OHM
RT0211	0104159	CHIP RESISTER 1.5KOHM+-10% 1/8W
RT0212	5040202	SEMI VARIABLE 2.2KOHM
RT0214	5040204	VARIABLE RESISTOR 10KOHM
RT0215	5040204	VARIABLE RESISTOR 10KOHM
RT0216	0104167	CHIP RESISTOR 5.6KOHM+-10% 1/8W
RT0217	5040205	VARIABLE RESISTOR 4.7KOHM
RT0302	0104149	CHIP RESISTOR 270 OHM+-10% 1/8W
RT5301	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RT5302	0104732	CHIP RESISTOR 12KOHM+-10% 1/16W
RT5307	0104732	CHIP RESISTOR 12KOHM+-10% 1/16W
RT5308	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RT5311	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RT5312	0104732	CHIP RESISTOR 12KOHM+-10% 1/16W
RT5313	0104732	CHIP RESISTOR 12KOHM+-10% 1/16W
RT5314	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RT5315	0104732	CHIP RESISTOR 12KOHM+-10% 1/16W
RT5316	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RT5317	0104733	CHIP RESISTOR 15KOHM+-10% 1/16W
RT5318	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RT5601	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RT5602	0104733	CHIP RESISTOR 15KOHM+-10% 1/16W
RT5603	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RT5604	0104734	CHIP RESISTOR 22KOHM+-10% 1/16W
RV5602	5040127	SEMI VARIABLE 22KOHM
RV5701	5002244	VARIABLE RESISTOR 10KOHM
RV5702	5002245	VARIABLE RESISTOR
D0001	CH10451	DIODE
D0101	5337422	DIODE DA221
D0102	5337351	DIODE MA132WK
D0201	5337351	DIODE MA132WK
D0301	5337352	DIODE MA132WA
D0302	5337351	DIODE MA132WK
D0303	CC10291R	DIODE 1SS353
D0305	5337351	DIODE MA132WK
D0352	5337351	DIODE MA132WK
D0394	5337422	DIODE DA221
D0401	5337422	DIODE DA221
D0403	5337422	DIODE DA221
D0551	5337372	DIODE SB07-03C
D0552	CC10291R	DIODE 1SS353
D0553	CC10291R	DIODE 1SS353
D0601	CC10291R	DIODE 1SS353
D0901	CC10291R	DIODE 1SS353
D0902	CC10291R	DIODE 1SS353
D1002	CC10291R	DIODE 1SS353
D1101	5328305	DIODE MA151WA
D1102	CC10291R	DIODE 1SS353
D1103	CC10291R	DIODE 1SS353
D1104	CC10771R	DIODE SML-010LT
D1105	CC10291R	DIODE 1SS353
D1201	5337422	DIODE DA221
D1301	5337422	DIODE DA221
D5301	CC10331R	DIODE HVU200A
D5401	CC10291R	DIODE 1SS353
D5402	CC10291R	DIODE 1SS353
D5403	5326022	DIODE MA160-M1D
D5404	5337421	DIODE DAN222
D5501	CC10291R	DIODE 1SS353
D5601	CC10331R	DIODE HVU200A
D5602	CC10331R	DIODE HVU200A
IC0101	1366631	IC HA118189MP
IC0102	CK13461R	IC UPC5023GS-101-E1
IC0201	1366923	IC HA118192AF
IC0202	CK12051R	IC CXL5517N
IC0203	1359591	IC CXL5508M-T3
IC0204	CK13471R	IC UPC5023GS-104-E1
IC0301	CK16781R	IC CXA2003N
IC0401	CK12231	IC HA118193F[TYPE330,535,635]
IC0401	CK12241	IC HA118193F[TYPE630,835]
IC0402	CK16471R	IC TDA7052AT
IC0404	1351431	IC M5223FP
IC0405	1351431	IC M5223FP
IC0551	CK16251U	IC BA9735KV
IC0601	CK18321R	IC UPC5023GS-122-E1
IC0631	CK18331R	IC LB1950V-TLR
IC0671	1366651	IC BA6417F
IC0901	CK18311U	IC CXP87240A-117R
IC0902	CK18271R	IC S84233FS-T2
IC0904	CK18261R	IC BU6229FV
IC0907	CE10171R	MODULE GP1U101X
IC1001	UE12324	CCD IMAGE SENSOR ASSY ICX207[TYPE330,535]
IC1001	UE12326	CCD IMAGE SENSOR ASSY ICX209[TYPE635]
IC1001	UE12327	CCD IMAGE SENSOR ASSY ICX211[TYPE630,835]

SYMBOL NO	P-NO	DESCRIPTION
IC1101	CK18721U	IC HD49322F
IC1102	CK12132U	IC HG51CS035TEA
IC1103	CK12061R	IC UPD16510GR
IC1104	CK18401U	IC HD6433042ST29F
IC1105	CK14171R	IC MX25S67MR
IC1201	CK13791R	IC UPC5023GS-105-E1
IC1301	CK18711R	IC MPC17A34ZVM
IC1401	FU10251	SENSOR, GYRO
IC1402	FU10252	SENSOR, GYRO
IC1403	5362204	IC NJM062M-TE1
IC1404	1359931	IC TC4W66F
IC5301	CK18371U	IC IR3Y29AM
IC5401	CK18431R	IC TL5001CD
IC5501	CK18431R	IC TL5001CD
IC5502	1351761	IC NJM2406F
IC5601	CK18381U	IC LZ95NA1
IC5602	CK15331R	IC NJM3414AV
Q0001	1322341	TRANSISTOR PT4810F
Q0002	5327521	PHOTO TRANSISTOR SPI-315-C
Q0003	5327521	PHOTO TRANSISTOR SPI-315-C
Q0004	1322341	TRANSISTOR PT4810F
Q0101	1323301	TRANSISTOR 2SB1219
Q0102	1323294	TRANSISTOR 2SA1774RS
Q0103	1323294	TRANSISTOR 2SA1774RS
Q0104	1323279	TRANSISTOR DTC114YE
Q0105	1323301	TRANSISTOR 2SB1219
Q0106	1323279	TRANSISTOR DTC114YE
Q0107	1323294	TRANSISTOR 2SA1774RS
Q0108	1323279	TRANSISTOR DTC114YE
Q0109	1323294	TRANSISTOR 2SA1774RS
Q0110	5328966	TRANSISTOR 2SA1037K-FST
Q0111	1323283	TRANSISTOR UMH1N
Q0112	1323291	TRANSISTOR 2SC4617
Q0116	1323279	TRANSISTOR DTC114YE
Q0117	1323279	TRANSISTOR DTC114YE
Q0120	1323301	TRANSISTOR 2SB1219
Q0121	1323291	TRANSISTOR 2SC4617
Q0122	1323279	TRANSISTOR DTC114YE
Q0123	1323291	TRANSISTOR 2SC4617
Q0130	1323279	TRANSISTOR DTC114YE
Q0131	1323279	TRANSISTOR DTC114YE
Q0140	1323241	TRANSISTOR XP1213
Q0170	1323301	TRANSISTOR 2SB1219
Q0171	1323253	TRANSISTOR XP4401
Q0173	1323253	TRANSISTOR XP4401
Q0175	1323291	TRANSISTOR 2SC4617
Q0176	1323294	TRANSISTOR 2SA1774RS
Q0178	1323291	TRANSISTOR 2SC4617
Q0179	1323294	TRANSISTOR 2SA1774RS
Q0201	1323241	TRANSISTOR XP1213
Q0202	1323279	TRANSISTOR DTC114YE
Q0203	1323241	TRANSISTOR XP1213
Q0204	1323291	TRANSISTOR 2SC4617
Q0206	1323253	TRANSISTOR XP4401
Q0208	1323241	TRANSISTOR XP1213
Q0209	1323241	TRANSISTOR XP1213
Q0210	1323291	TRANSISTOR 2SC4617
Q0211	1323291	TRANSISTOR 2SC4617
Q0212	1323279	TRANSISTOR DTC114YE
Q0213	1323278	TRANSISTOR DTA114YE
Q0215	1323279	TRANSISTOR DTC114YE
Q0216	1323279	TRANSISTOR DTC114YE
Q0217	1323279	TRANSISTOR DTC114YE
Q0219	1323241	TRANSISTOR XP1213
Q0221	1323241	TRANSISTOR XP1213
Q0224	1323283	TRANSISTOR UMH1N
Q0225	1323294	TRANSISTOR 2SA1774RS
Q0226	1323279	TRANSISTOR DTC114YE
Q0228	1323279	TRANSISTOR DTC114YE
Q0229	1323241	TRANSISTOR XP1213
Q0231	1323279	TRANSISTOR DTC114YE
Q0232	1323294	TRANSISTOR 2SA1774RS
Q0233	1323294	TRANSISTOR 2SA1774RS
Q0301	1323301	TRANSISTOR 2SB1219
Q0302	1323279	TRANSISTOR DTC114YE
Q0303	1323291	TRANSISTOR 2SC4617
Q0305	1323279	TRANSISTOR DTC114YE
Q0306	1323278	TRANSISTOR DTA114YE
Q0307	1323291	TRANSISTOR 2SC4617
Q0308	1323279	TRANSISTOR DTC114YE
Q0309	1323294	TRANSISTOR 2SA1774RS
Q0350	1323291	TRANSISTOR 2SC4617
Q0352	1323294	TRANSISTOR 2SA1774RS
Q0356	1323291	TRANSISTOR 2SC4617
Q0357	1323279	TRANSISTOR DTC114YE
Q0358	1323291	TRANSISTOR 2SC4617
Q0360	1323279	TRANSISTOR DTC114YE
Q0361	1323278	TRANSISTOR DTA114YE
Q0362	1323279	TRANSISTOR DTC114YE
Q0363	1323279	TRANSISTOR DTC114YE
Q0364	1323279	TRANSISTOR DTC114YE
Q0365	1323279	TRANSISTOR DTC114YE
Q0366	1323278	TRANSISTOR DTA114YE
Q0367	1323278	TRANSISTOR DTA114YE
Q0368	1323279	TRANSISTOR DTC114YE
Q0370	1323291	TRANSISTOR 2SC4617
Q0371	1323291	TRANSISTOR 2SC4617
Q0372	1323294	TRANSISTOR 2SA1774RS
Q0373	1323279	TRANSISTOR DTC114YE
Q0374	1323279	TRANSISTOR DTC114YE
Q0395	1323291	TRANSISTOR 2SC4617
Q0401L	1323279	TRANSISTOR DTC114YE
Q0401R	1323279	TRANSISTOR DTC114YE
Q0402	1323279	TRANSISTOR DTC114YE
Q0403L	1323291	TRANSISTOR 2SC4617
Q0403R	1323291	TRANSISTOR 2SC4617
Q0404	1323291	TRANSISTOR 2SC4617
Q0409	1323291	TRANSISTOR 2SC4617
Q0410	1323291	TRANSISTOR 2SC4617
Q0411	1323301	TRANSISTOR 2SB1219
Q0412	1323279	TRANSISTOR DTC114YE
Q0413	1323294	TRANSISTOR 2SA1774RS
Q0414	1323279	TRANSISTOR DTC114YE
Q0415	1323291	TRANSISTOR 2SC4617
Q0551	1308011	TRANSISTOR MPL1
Q0552	CA10271R	TRANSISTOR 2SB1424
Q0553	CA10271R	TRANSISTOR 2SB1424
Q0555	CA10271R	TRANSISTOR 2SB1424
Q0556	1323279	TRANSISTOR DTC114YE
Q0557	CA10271R	TRANSISTOR 2SB1424
Q0558	1323291	TRANSISTOR 2SC4617
Q0559	1308011	TRANSISTOR MPL1
Q0561	1308011	TRANSISTOR MPL1
Q0562	1308011	TRANSISTOR MPL1
Q0563	1323279	TRANSISTOR DTC114YE
Q0601	1323278	TRANSISTOR DTA114YE
Q0602	1323291	TRANSISTOR 2SC4617
Q0603	1323291	TRANSISTOR 2SC4617
Q0604	1323291	TRANSISTOR 2SC4617
Q0901	1323294	TRANSISTOR 2SA1774RS

SYMBOL NO	P-NO	DESCRIPTION
Q0902	1323291	TRANSISTOR 2SC4617
Q0903	1323278	TRANSISTOR DTA114YE
Q0904	1323294	TRANSISTOR 2SA1774RS
Q0905	5328975	TRANSISTOR 2SC2412K
Q0907	1323279	TRANSISTOR DTC114YE
Q0909	1323279	TRANSISTOR DTC114YE
Q0911	1323291	TRANSISTOR 2SC4617
Q0912	1323291	TRANSISTOR 2SC4617
Q1001	5328221	TRANSISTOR 2SC2620-QC
Q1101	5328966	TRANSISTOR 2SA1037K-FST
Q1102	5328975	TRANSISTOR 2SC2412K
Q1103	5328966	TRANSISTOR 2SA1037K-FST
Q1108	1323279	TRANSISTOR DTC114YE
Q1201	5328975	TRANSISTOR 2SC2412K
Q1202	5328975	TRANSISTOR 2SC2412K
Q1203	1323141	TRANSISTOR 2SC2411K
Q1401	1323279	TRANSISTOR DTC114YE
Q5301	1323294	TRANSISTOR 2SA1774RS
Q5302	1323271	TRANSISTOR DTC144EE
Q5401	1323272	TRANSISTOR DTA144EE
Q5402	1323271	TRANSISTOR DTC144EE
Q5403	1323294	TRANSISTOR 2SA1774RS
Q5404	1323271	TRANSISTOR DTC144EE
Q5405	1323293	TRANSISTOR 2SC4617 (R/S)
Q5406	CA10793R	TRANSISTOR 2SB1122ST
Q5501	1323272	TRANSISTOR DTA144EE
Q5502	1323279	TRANSISTOR DTC114YE
Q5503	1323271	TRANSISTOR DTC144EE
Q5504	1323271	TRANSISTOR DTC144EE
Q5505	1323293	TRANSISTOR 2SC4617 (R/S)
Q5506	1323293	TRANSISTOR 2SC4617 (R/S)
Q5507	1323271	TRANSISTOR DTC144EE
Q5508	1323272	TRANSISTOR DTA144EE
Q5509	1323271	TRANSISTOR DTC144EE
Q5510	1323293	TRANSISTOR 2SC4617 (R/S)
Q5511	CA10771R	TRANSISTOR FP102-TL
Q5512	1323012	TRANSISTOR 2SC3647
Q5513	1323012	TRANSISTOR 2SC3647
Q5514	1323278	TRANSISTOR DTA114YE
Q5601	1323293	TRANSISTOR 2SC4617 (R/S)
Q5602	1323294	TRANSISTOR 2SA1774RS
Q5604	1323271	TRANSISTOR DTC144EE
Q5605	1323279	TRANSISTOR DTC114YE
Q5606	1323279	TRANSISTOR DTC114YE
ZD5601	CC10575R	DIODE RD5.1UMB2
ZD5702	CC10448R	DIODE MA3056M
T0551	5148333	TRANSFORMAR,POWER
T5401	BC10211R	TRANSFORMER,DC
T5501	BC10201U	TRANSFORMER
L0101	0773001	CHOCE COIL 10UH+-10%
L0102	0773004	COIL 100UH
L0103	0773124	CHOKE COIL 27UH+-5%
L0104	0773001	CHOCE COIL 10UH+-10%
L0105	0773117	CHOKE COIL 8.2UH+-5%
L0107	BA10315R	COIL 150UH
L0108	0773135	CHOKE COIL 180UH+-5%
L0109	BA10318R	COIL 470UH
L0110	0773124	CHOKE COIL 27UH+-5%[TYPE330,535,635]
L0110	BA10309R	COIL 22UH[TYPE630,835]
L0111	BA10317R	COIL 330UH
L0112	BA10308R	COIL 15UH
L0170	0773001	CHOCE COIL 10UH+-10%
L0171	0773001	CHOCE COIL 10UH+-10%
L0172	BA10313R	COIL 68UH
L0173	BA10308R	COIL 15UH

SYMBOL NO	P-NO	DESCRIPTION
L0201	0773124	CHOKE COIL 27UH+-5%
L0202	0773013	COIL 8.2KUH
L0203	BA10307R	COIL 10UH
L0204	0773133	CHOKE COIL 120UH+-5%
L0205	0773003	COIL 47UH
L0206	0773003	COIL 47UH
L0207	0773131	CHOKE COIL 82UH+-5%
L0301	0773001	CHOCE COIL 10UH+-10%
L0350	0773003	COIL 47UH
L0401	0773003	COIL 47UH
L0402	0773001	CHOCE COIL 10UH+-10%
L0551	BA10127R	COIL 10UH
L0552	BA10128R	COIL 22UH
L0554	BA10128R	COIL 22UH
L0556	BA10135R	COIL 10UH
L0559	0773004	COIL 100UH
L0560	0773004	COIL 100UH
L0561	BA10129R	COIL 47UH
L0563	BA10127R	COIL 10UH
L0564	BA10129R	COIL 47UH
L0565	BA10129R	COIL 47UH
L0566	0773001	CHOCE COIL 10UH+-10%
L0601	0773002	COIL 22UH
L0902	BA10308R	COIL 15UH
L0903	0773002	COIL 22UH
L0904	0773001	CHOCE COIL 10UH+-10%
L0906	0773002	COIL 22UH
L0908	0773003	COIL 47UH
L0909	0773003	COIL 47UH
L1101	0773003	COIL 47UH
L1102	0773005	COIL 220UH
L1103	BA10314R	COIL 100UH
L1104	0773003	COIL 47UH
L1105	0773001	CHOCE COIL 10UH+-10%
L1106	0773001	CHOCE COIL 10UH+-10%
L1107	0773002	COIL 22UH
L1109	0773005	COIL 220UH
L1301	0773002	COIL 22UH
L5301	BA10334R	COIL 10UH
L5302	BA10336R	COIL 47UH
L5303	BA10152R	COIL 47UH
L5304	BA10149R	COIL 33UH
L5401	BA10334R	COIL 10UH
L5402	BA10337R	COIL 100UH
L5403	BA10337R	COIL 100UH
L5404	BA10337R	COIL 100UH
L5501	BA10333R	COIL 4.7UH
L5502	BA10136R	COIL 22UH
L5503	BA10137R	COIL 150UH
L5601	BA10334R	COIL 10UH
L5602	BA10334R	COIL 10UH
L5603	BA10334R	COIL 10UH
L5604	BA10147R	COIL 22UH
X0201	1930212	CRYSTAL
X0901	BL10572R	CRYSTAL
X0902	BL10311R	CRYSTAL
X1101	1930093	CRYSTAL
X5301	BL10193R	CRYSTAL
CP0202	BE10232R	COIL 12.2MHz
CP0203	BE10342R	FILTER,BAND PASS
CP0204	BE10345R	FILTER,BAND PASS
CP0205	5172734	DELAY LINE
CP0206	5172735	FILTER,LOW PASS
CP1101	BE10411R	FILTER,LOW PASS[TYPE330,535]
CP1101	BE10412R	FILTER,LOW PASS[TYPE630,635,835]

SYMBOL NO	P-NO	DESCRIPTION
⚠F0551	FM10132R	FUSE 1.6A/125V
⚠F0552	FM10134R	FUSE 0.8A/125V
⚠F0553	FM10134R	FUSE 0.8A/125V
JK0200	5695292	JACK
PG0001	5666921	MINI PLUG
PG0101	EA10501R	PLUG
PG0401L	5668671	MINI PLUG
PG0401R	5668673	MINI PLUG
PG0402	5669191	PLUG
PG0551	5669175	PLUG
PG0601	5692362	MINI PLUG
PG0602	EA10641R	PLUG
PG0603	EA10501R	PLUG
PG0604	5668671	MINI PLUG
PG0901	EA10651R	PLUG
PG0902	5668754	PLUG
PG0903	5669193	MINI PLUG
PG0904	5669197	PLUG
PG0905	5669166	PLUG
PG1001	1830344	PLUG
PG1101	1830343	PLUG
PG1103	1830355	PLUG
PG1301	EA10377R	PLUG
PG5501	EA10132R	PLUG
PG5701	5669197	PLUG
PG5702	EA11071R	PLUG
S0003	5636171	SWITCH
S0004	5636171	SWITCH
S0005	5636171	SWITCH
S0006	5635331	SWITCH
S0007	5613523	SWITCH
SW0902	1742011	SWITCH
SW0903	1742011	SWITCH
SW0904	1742011	SWITCH
SW0905	1742011	SWITCH
SW0906	FB10201R	SWITCH
SW5701	FB10201R	SWITCH

ELECTRONIC VIEWFINDER[EMQ]SECTION

C2001	0806169	ELECTROLYTIC 47UF 16V
C2002	0806169	ELECTROLYTIC 47UF 16V
C2003	0806146	ELECTROLYTIC 2.2UF 50V
C2004	0268437	POLYPROPYLENE 4700PF+-5%50V
C2005	0256871	ELECTROLYTIC 47UF 25V
C2006	0249655	CERAMIC CHIP 1000PF+-10% 1000V
C2007	0249656	CERAMIC CHIP 1000PF+-10% 500V
C2008	0806146	ELECTROLYTIC 2.2UF 50V
C2009	0893086	CERAMIC CHIP 0.1UF+80-20% 50V
C2011	0209852	CERAMIC CHIP 180PF+-5% 50V
C2012	0893086	CERAMIC CHIP 0.1UF+80-20% 50V
C2013	0893086	CERAMIC CHIP 0.1UF+80-20% 50V
C2014	0268521	MYLAR 0.1UF+-10% 50V
C2015	0202151	CERAMIC CHIP 2200PF+-5% 50V
C2016	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C2017	0806145	ELECTROLYTIC 1UF 50V
C2018	0893062	CERAMIC CHIP 1UF+80-20% 16V
R2001	0103852	CHIP RESISTOR 5.6KOHM+-5% 0.1W
R2002	0103869	CHIP RESISTOR 150KOHM+-5% 0.1W
R2003	0103876	CHIP RESISTOR 560KOHM+-5% 0.1W
R2004	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2005	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2006	0103819	CHIP RESISTOR 10 OHM+-5% 0.1W
R2007	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2008	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2009	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2011	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2012	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R2013	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2014	0103846	CHIP RESISTOR 1.8KOHM+-5% 0.1W
R2015	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2016	0103814	CHIP RESISTOR 3.9 OHM+-10% 0.1W
R2017	0103846	CHIP RESISTOR 1.8KOHM+-5% 0.1W
R2018	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2019	0103848	CHIP RESISTOR 2.7KOHM+-5% 0.1W
R2020	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R2021	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2022	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R2024	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R2025	0103874	CHIP RESISTOR 390KOHM+-5% 0.1W
R2026	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2027	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
RT2001	5035204	SEMI VARIABLE 2.2MOHM
RT2002	5030251	SEMI VARIABLE 1MOHM
RT2003	5040103	SEMI VARIABLE 470 OHM
D2001	5337133	DIODE MA141K
D2002	5337321	DIODE MA199
IC2001	1365881	IC HA118179F
Q2001	5323831	TRANSISTOR 2SD974
Q2002	5326682	TRANSISTOR XN1B301
⚠T2001	5240567	TRANS
L2001	0773003	COIL 47UH
L2002	5244017	COIL
CN2001	EF10248	CONNECTOR
CN2002	EF10248	CONNECTOR
⚠CS2001	5887005	SOCKET
⚠CT2001	5319063	CRT
PG2001	5669631	CONNECTOR
PG2002	5668469	PLUG
⚠TF2001	5721352	FUSE
CN0901	1880371	CONNECTOR

CHAPTER 6 SCHEMATIC, CIRCUIT BOARD AND BLOCK DIAGRAMS/ MICROPROCESSOR PIN FUNCTION TABLE

Cautions when using schematic diagrams

Caution for safety

The parts marked ⚠ are critical for safety. Be sure to use the specified parts to ensure safety when replacing them.

1. Values in schematic diagrams

The values, dielectric strength (power capacitance) and tolerances of the resistors (excluding variable resistors) and capacitors are indicated in the schematic diagrams using abbreviations.

[Resistors]

Item	Indication
Value	No indication ..... Ω K ..... k Ω M ..... M Ω
Tolerance	No indication ..... ± 5% (All tolerances other than ± 5% are indicated in the schematic diagrams)
Power capacitance	No indication ..... 1/8W (1/16W for leadless resistors without indication) All capacitances other than the above are indicated in the schematic diagrams.

[Capacitors]

Item	Indication
Value	No indication ..... μ F P ..... pF
Dielectric strength	No indication ..... 50V (All dielectric strengths other than 50V are indicated in the schematic diagrams.)

[Coils]

Item	Indication
Value	μ ..... μ H m ..... mH

2. Markings in schematic diagrams

1) Parts marked " ■ " with circuit numbers in the schematic diagrams are discrete parts.
2) Parts marked " ● " with circuit numbers in the schematic diagrams are leadless parts.

Cautions when using circuit board diagrams

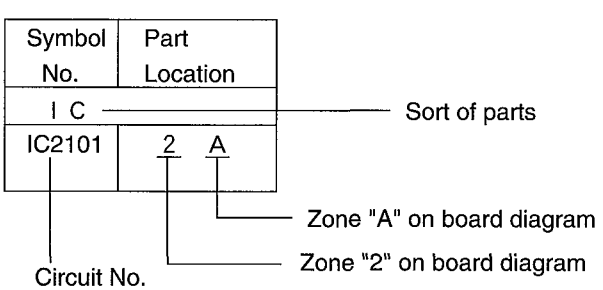
1. Identifications of sides A/B in circuit board diagrams

1) Board having a pattern on one side and parts on both sides.
   Side A: Shows discrete parts, viewed from the pattern side.
   Side B: Shows leadless parts, viewed from the pattern side.
2) Board having patterns on both sides and parts on both sides.
   Side A: Shows parts and patterns which can be seen when the case is opened.
   Side B: Shows parts and the pattern on the back of side A.

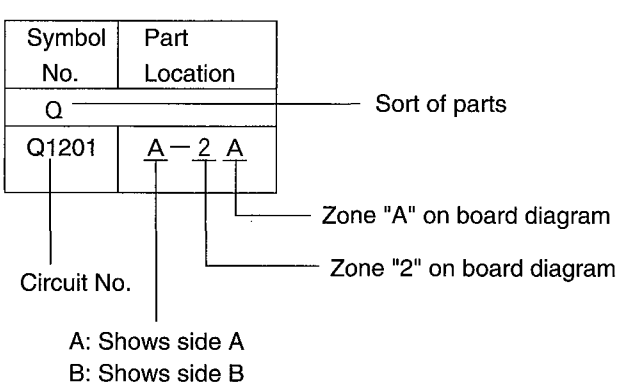
2. Table for indexing locations of parts

This table shows locations of each part on the circuit board diagrams. The locations are indicated using the guide scales on the external lines of diagrams.

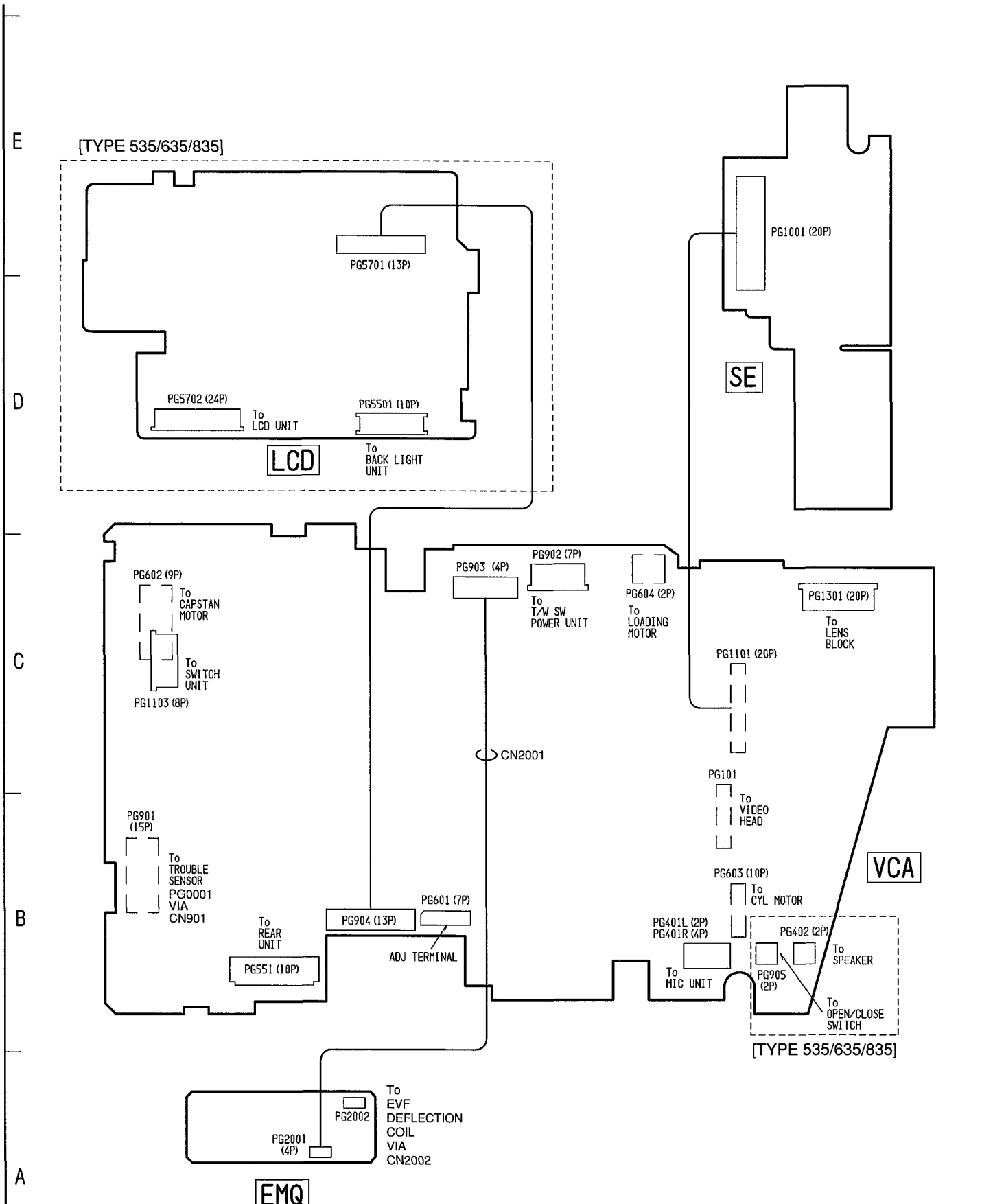
1) In case of one-layer board



2) In case of side A/B indication board



INTERNAL WIRING DIAGRAM

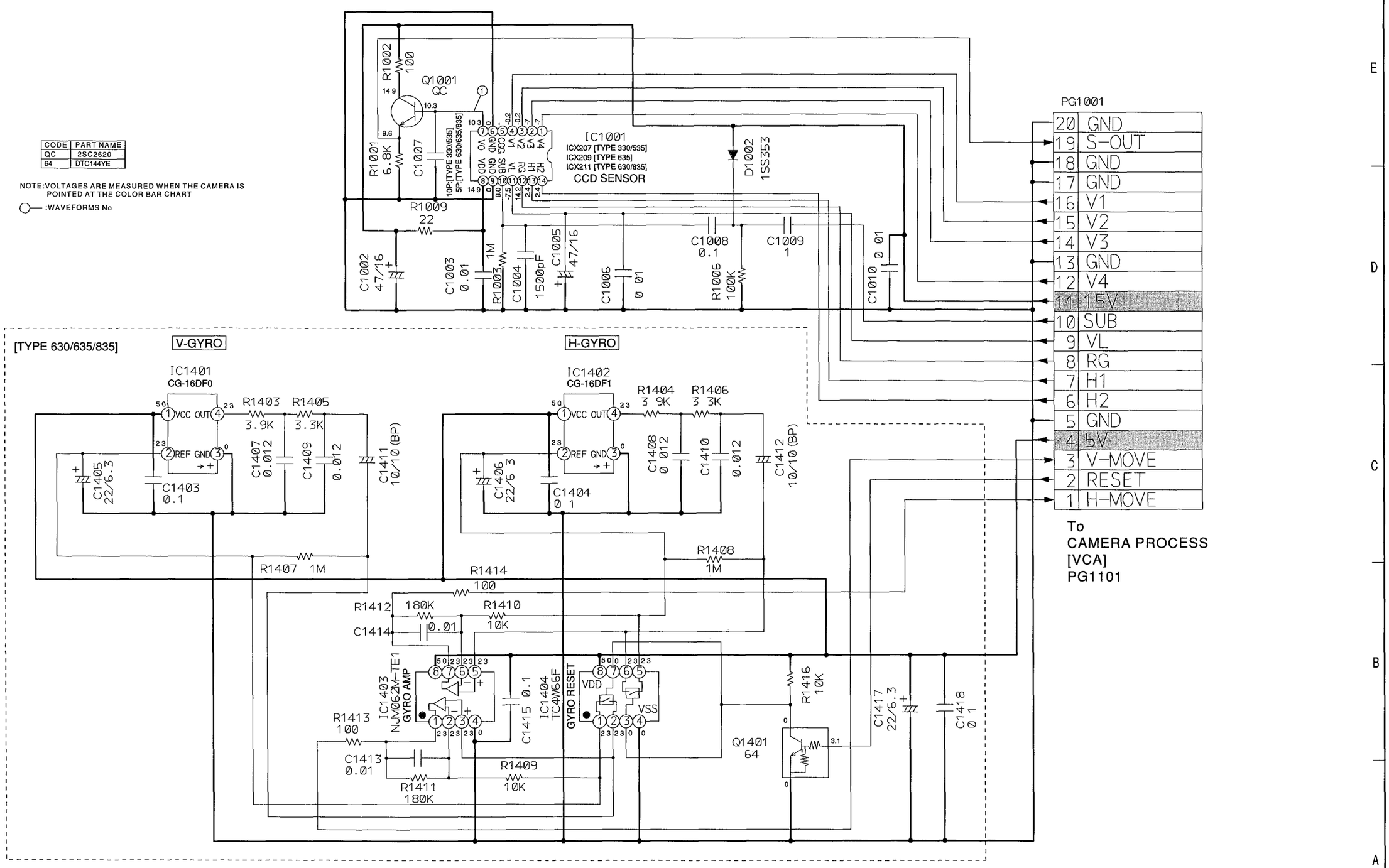


SENSOR/GYRO [SE] SCHEMATIC DIAGRAM

CODE	PART NAME
QC	2SC2620
64	DTC144YE

NOTE:VOLTAGES ARE MEASURED WHEN THE CAMERA IS POINTED AT THE COLOR BAR CHART

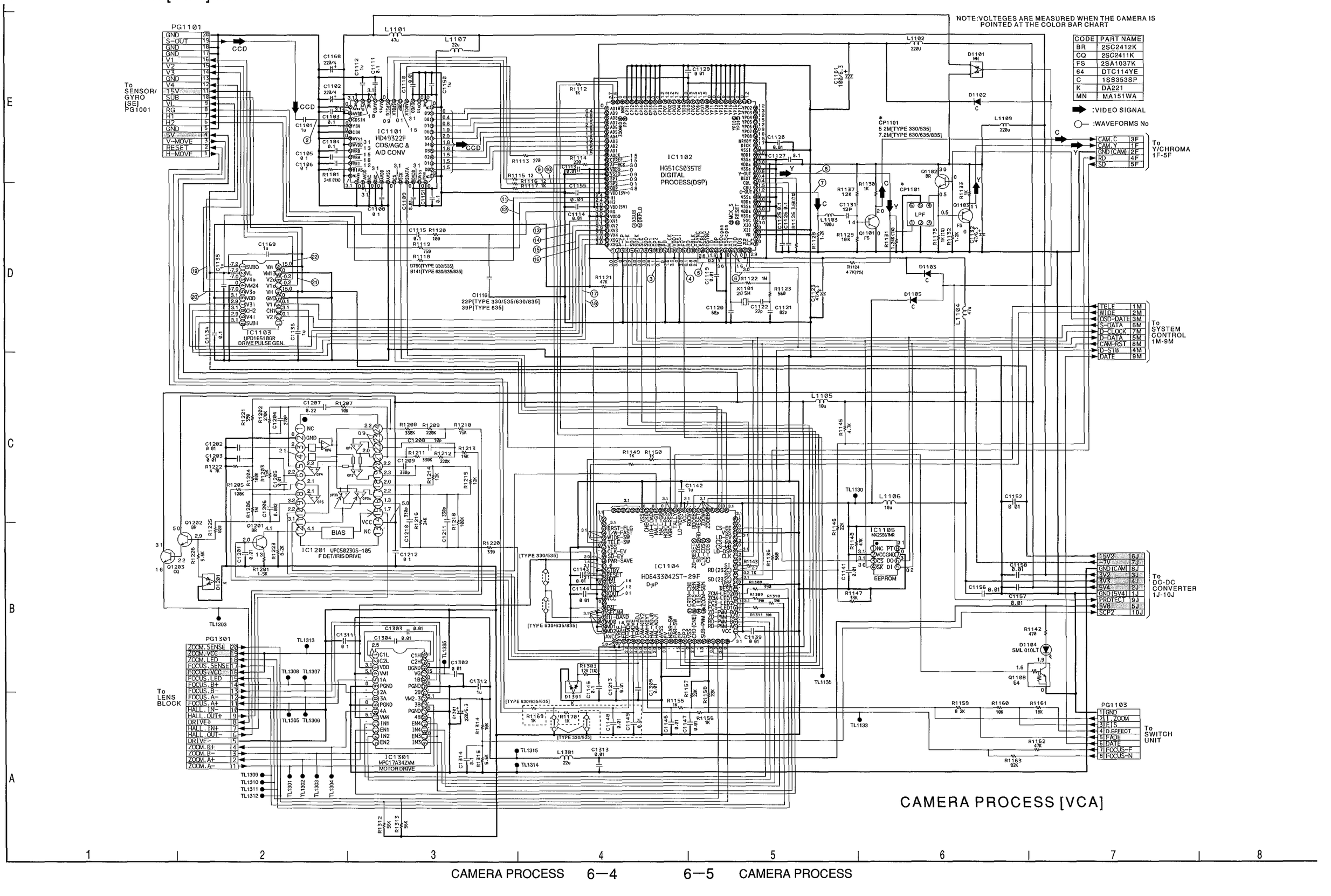
◯— :WAVEFORMS No



SENSOR/GYRO [SE]

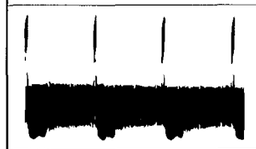
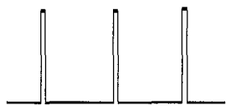
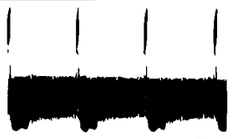
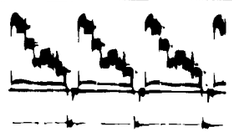
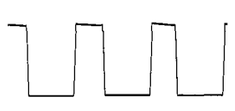
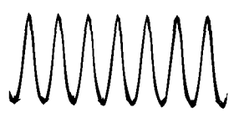
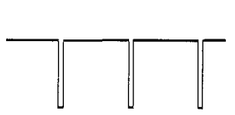
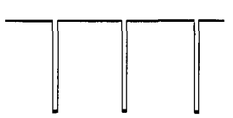
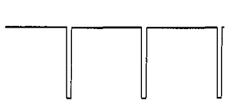
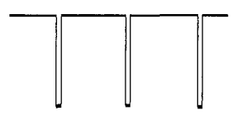
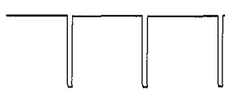
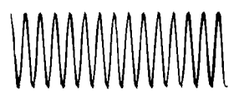
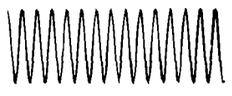
SENSOR/GYRO 6—2 6—3 SENSOR/GYRO

CAMERA PROCESS [VCA] SCHEMATIC DIAGRAM

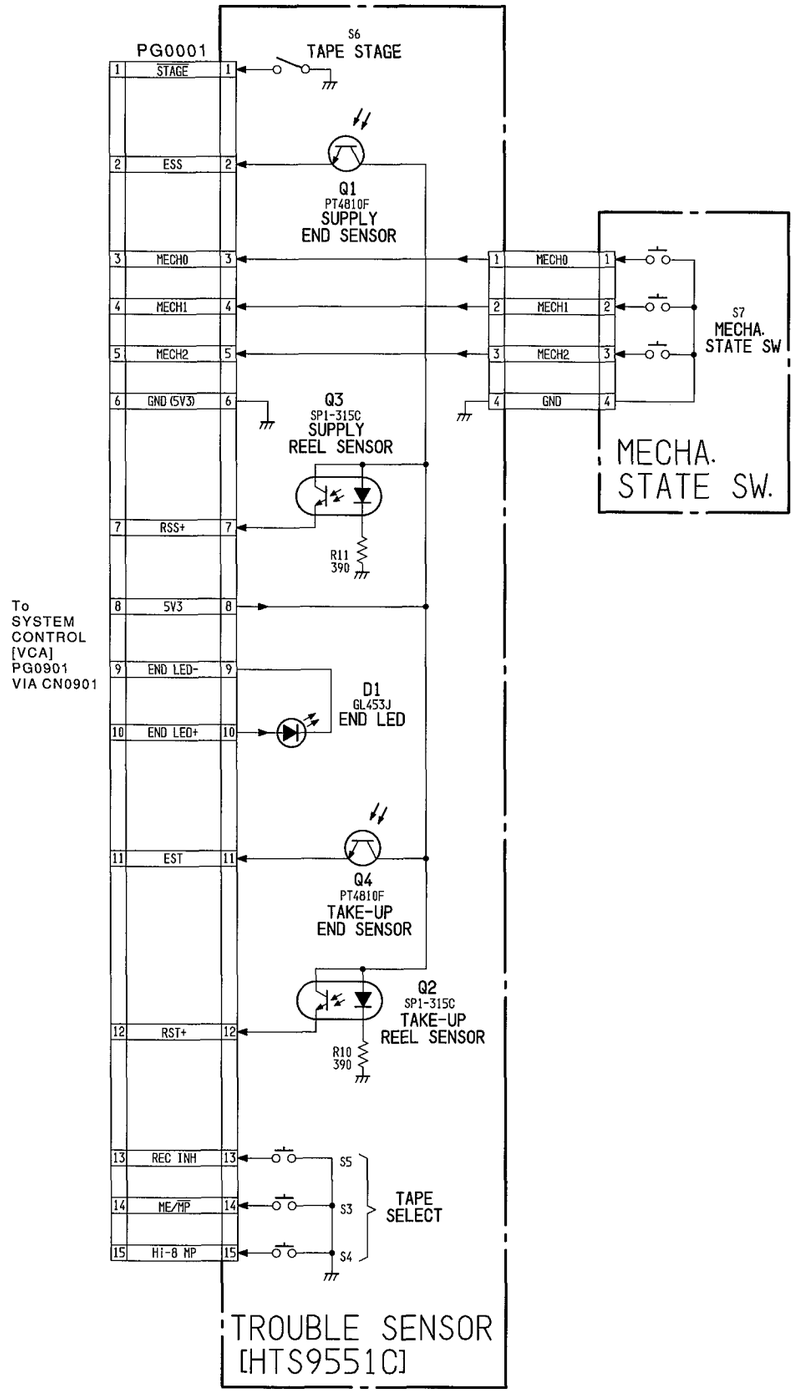


1 2 3 4 5 6 7 8

WAVEFORMS [CAMERA]

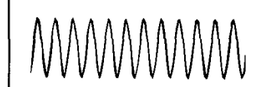
1-A IC1001-7 1.1Vp-p 0 2V/20.0µsec.cm COLOR CHART	7-A IC1102-42 550mVp-p 0.2V/20.0µsec cm COLOR CHART	13-A IC1102-115 3 1Vp-p 1V/20.0µsec.cm COLOR CHART	19-A IC1103-3 7.3Vp-p 2V/20.0µsec.cm COLOR CHART
			
2-A IC1101-27 1.1Vp-p 0.2V/20.0µsec.cm COLOR CHART	8-A IC1102-46 1.0Vp-p 0.2V/20.0µsec.cm COLOR CHART	14-A IC1102-116 3 1Vp-p 1V/20.0µsec.cm COLOR CHART	20-A IC1103-5 7.3Vp-p 2V/20.0µsec.cm COLOR CHART
			
3-A IC1102-10 3.0Vp-p 1V/5.0msec.cm COLOR CHART	9-A IC1102-106 4.2Vp-p 1V/50.0nsec.cm COLOR CHART	15-A IC1102-117 3.1Vp-p 1V/20.0µsec.cm COLOR CHART	21-A IC1103-17 7.3Vp-p 2V/20.0µsec.cm COLOR CHART
			
4-A IC1102-16 3.0Vp-p 1V/5.0msec.cm COLOR CHART	10-A IC1102-107 4.2Vp-p 1V/50.0nsec.cm COLOR CHART	16-A IC1102-118 3.1Vp-p 1V/20.0µsec.cm COLOR CHART	22-A IC1103-18 7.3Vp-p 2V/20.0µsec.cm COLOR CHART
			
5-A IC1102-19 3.0Vp-p 1V/20.0µsec.cm COLOR CHART	11-A IC1102-110 7.0Vp-p 2V/100µsec.cm COLOR CHART	17-A IC1102-119 3.1Vp-p 1V/5.0msec.cm COLOR CHART	
			
6-A IC1102-27 1.6Vp-p 0.5V/50 0nsec.cm COLOR CHART	12-A IC1102-111 7.0Vp-p 2V/100nsec.cm COLOR CHART	18-A IC1102-120 3.1Vp-p 1V/5 0msec.cm COLOR CHART	
			

TROUBLE SENSOR [HTS9551C] SCHEMATIC DIAGRAM

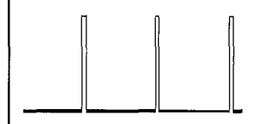


WAVEFORMS [SYS.CON.]

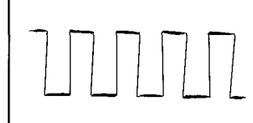
1-A IC901-41 2.8Vp-p
1V/100nsec.cm
REC/PLAY



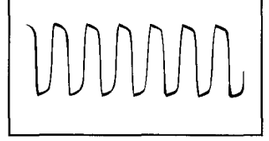
2-A IC901-64 4.9Vp-p
1V/20.0µsec.cm
REC/PLAY



3-A IC901-68 3.2Vp-p
1V/500µsec.cm
REC/PLAY



4-A IC901-85 3.4Vp-p
1V/20.0µsec.cm
REC/PLAY



SYSTEM CONTROL [VCA] SCHEMATIC DIAGRAM

CODE	PART NAME
BR	2SC4617
FR	2SA1774RS
54	DTA114YE
64	DTC114YE
C	1SS353SP

:WAVEFORMS No

※ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE

IC0901
CXP87240117R
SYSTEM CONTROL(S)-μP

IC0902
S84233FS
BACK-UP DET

IC0903
GP1U101X
IR
RECEIVER

IC0904
BU6229FV
CHARA GEN

To LCD DRIVE [LCD] PG5701

To ELECTRONIC VIEWFINDER [EMQ] PG2001

To DC-DC CONVERTER 1H-18H

To AUDIO 1C-8C

To Y/CHROMA 1E-32E

To CAMERA PROCESS 1M-9M

To SERVO 1L-25L

To TROUBLE SENSOR PG0001 VIA CN0901

To OPEN/CLOSE SWITCH

To T/W+POWER UNIT

REW/REVIEW

EJECT F FWD STOP PLAY

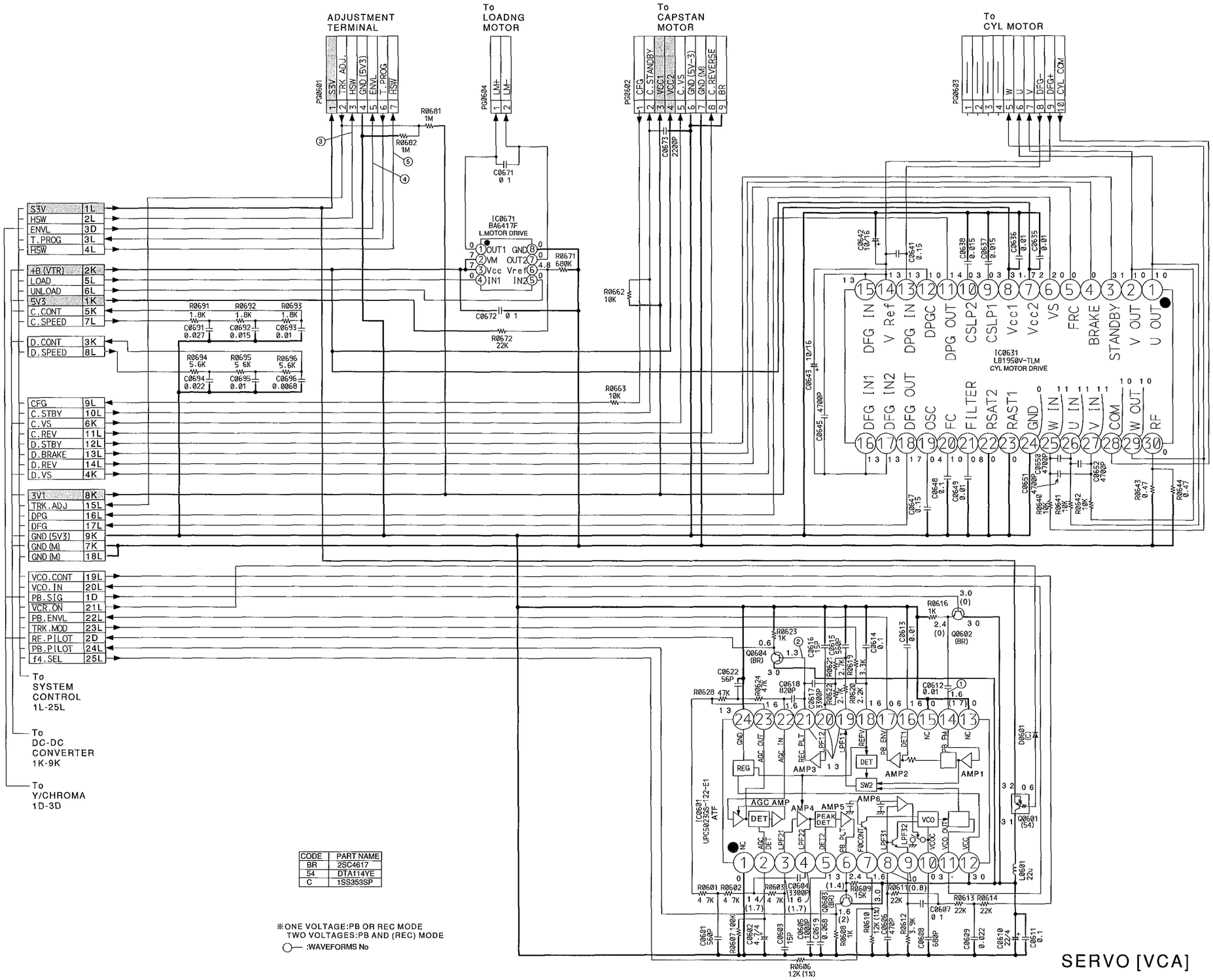
SWP-JPM1110MT

SW0906 SW-SPVG11R

BATTERY HOLDER (BACK UP)

SYSTEM CONTROL [VCA]

SERVO [VCA] SCHEMATIC DIAGRAM



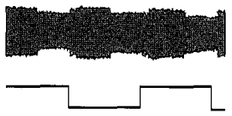
CODE	PART NAME
BR	2SC4617
54	DTA114YE
C	1SS353SP

※ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE
◯— :WAVEFORMS No

SERVO [VCA]

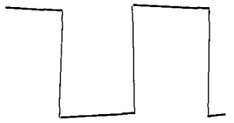
WAVEFORMS [SERVO]

1-A IC601-14 200mVp-p
0.1V/5.0msec.cm
PLAY

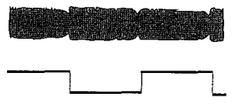


2-A IC601-21 560mVp-p
0.2V/5.0msec cm
REC

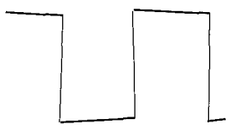
3-A PG601-3 3.3Vp-p
1V/5.0msec.cm
REC/PLAY



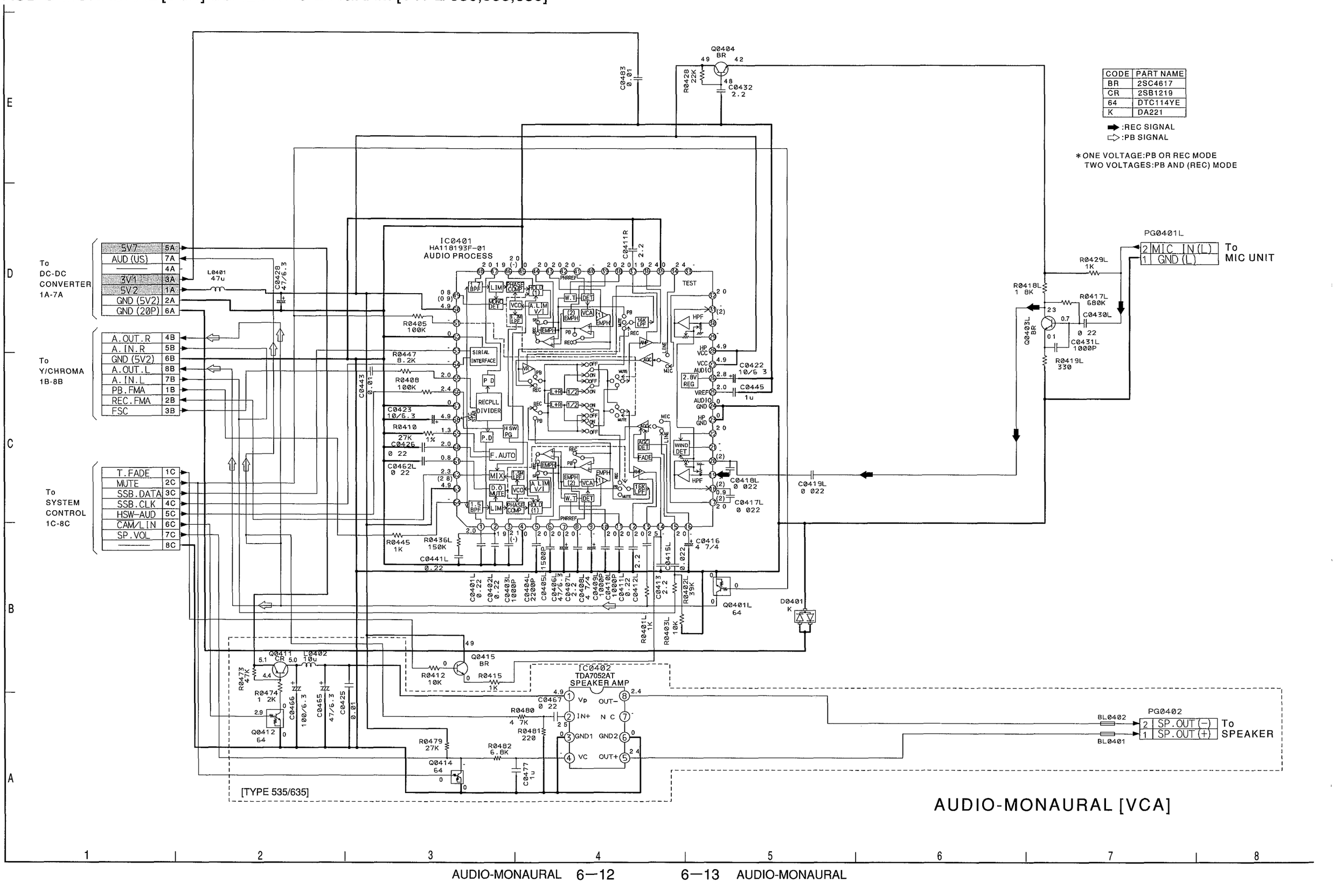
4-A PG601-5 150mVp-p
0.1V/5.0msec.cm
PLAY



5-A PG601-7 2 4Vp-p
0.5V/5.0msec.cm
REC/PLAY



AUDIO-MONAURAL [VCA] SCHEMATIC DIAGRAM [TYPE 330,535,635]



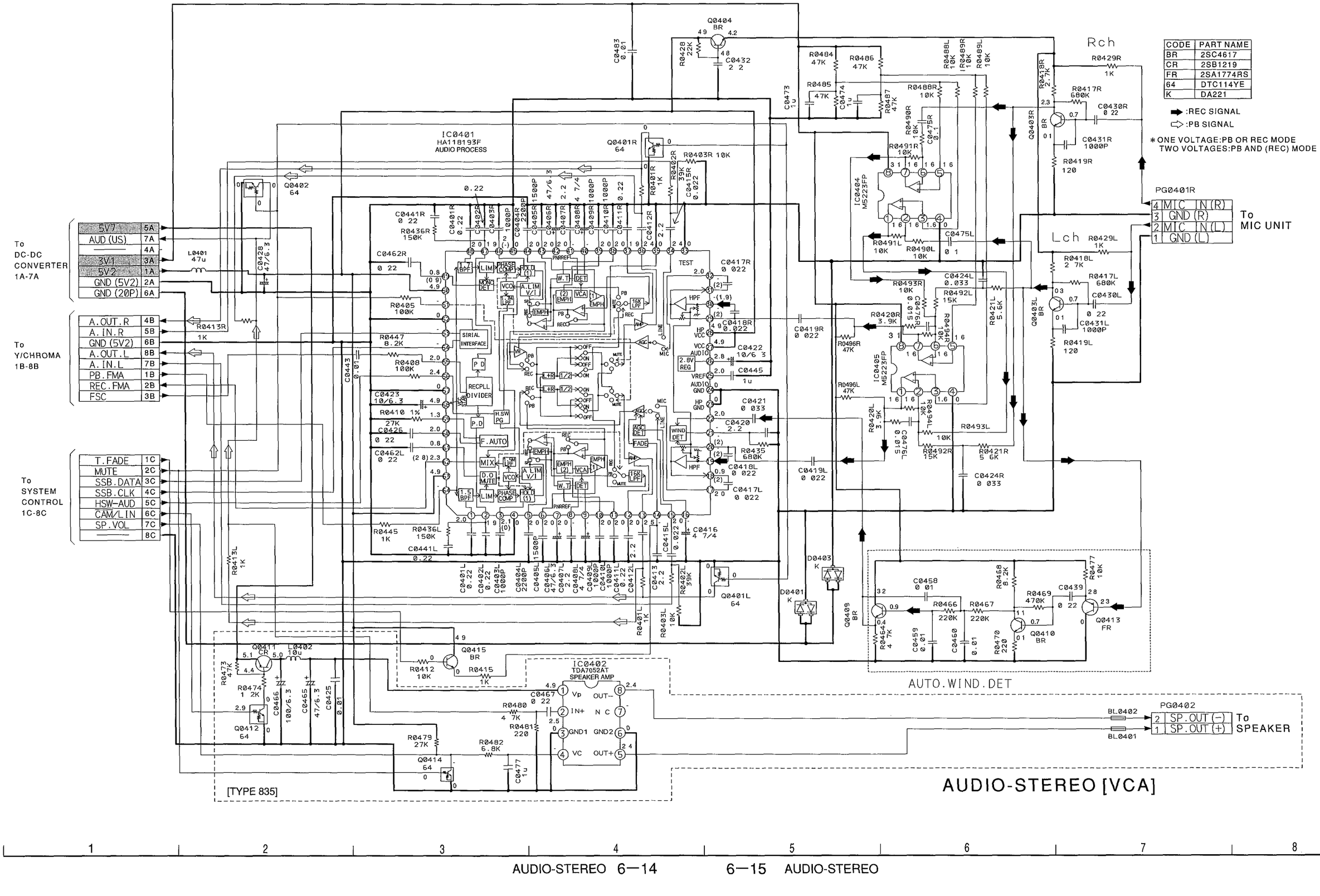
CODE	PART NAME
BR	2SC4617
CR	2SB1219
64	DTC114YE
K	DA221

➡ :REC SIGNAL
⇨ :PB SIGNAL

* ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE

AUDIO-MONAURAL [VCA]

AUDIO-STEREO [VCA] SCHEMATIC DIAGRAM [TYPE 630,835]



DC-DC CONVERTER [VCA] SCHEMATIC DIAGRAM

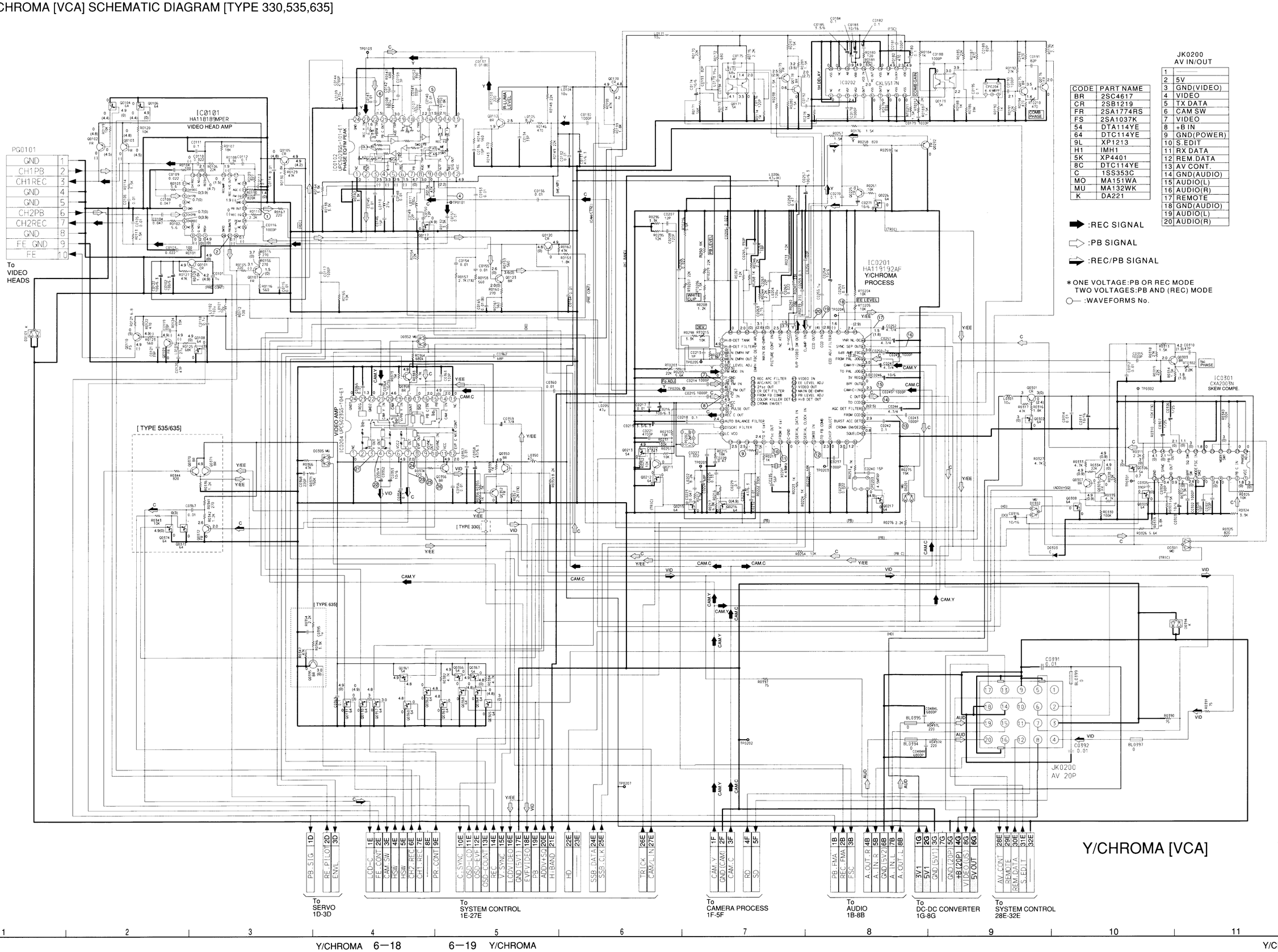
CODE	PART NAME
AE	2SB1424R
BR	2SC4617
L01	MPL-1
64	DTC114YE
C	1SS353SP
J	SB07-03C

IC0551
BA9735KV
PWM

※VOLTAGE:STOP MODE

DC-DC CONVERTER [VCA]

Y/CHROMA [VCA] SCHEMATIC DIAGRAM [TYPE 330,535,635]

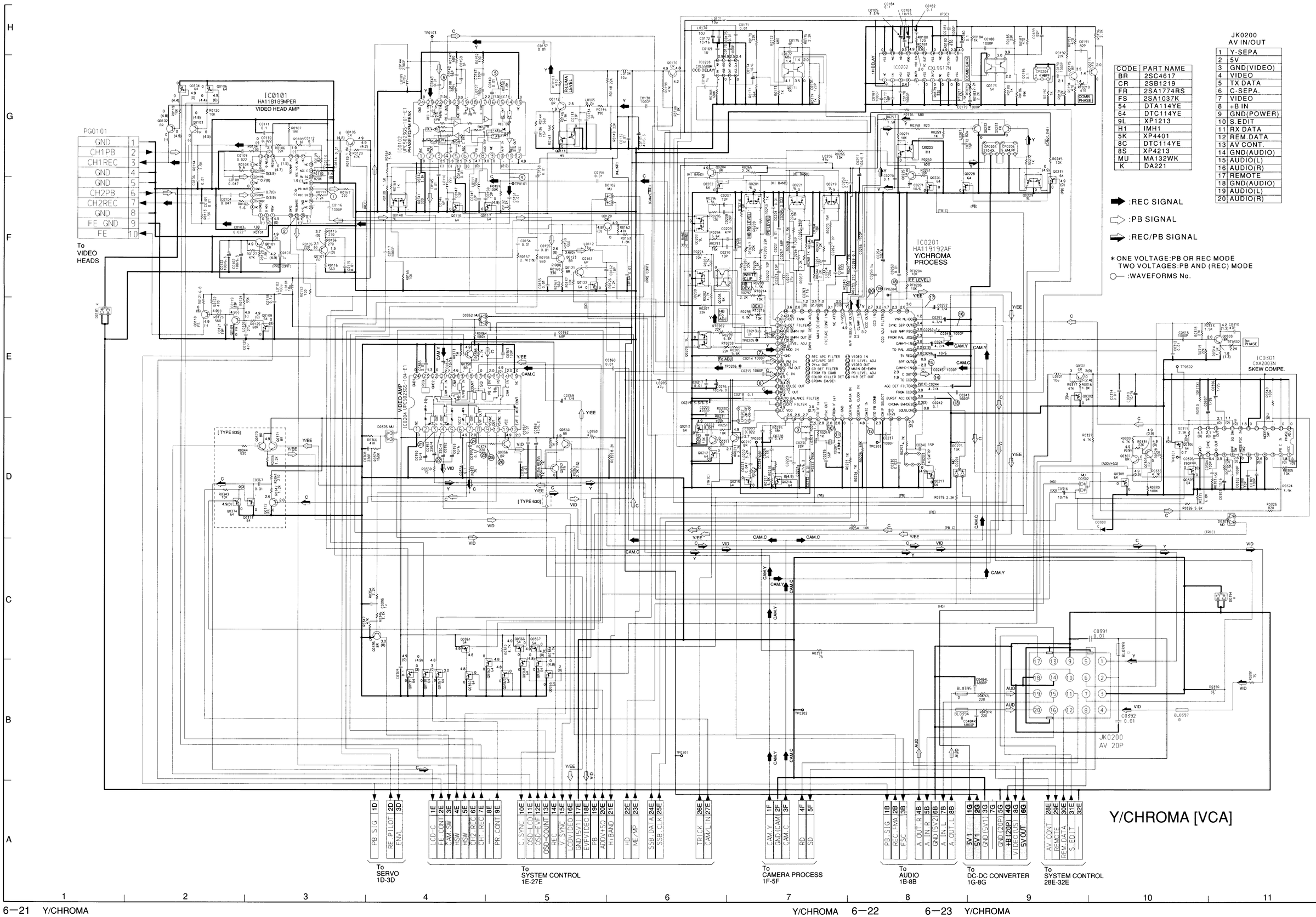


CODE	PART NAME
BR	2SC4617
CR	2SB1219
FR	2SA1774RS
FS	2SA1037K
54	DTA114YE
64	DTC114YE
9L	XP1213
H1	IMH1
5K	XP4401
8C	DTC114YE
C	1SS353C
MO	MA151WA
MU	MA132WK
K	DA221

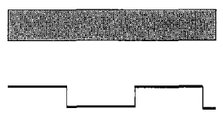
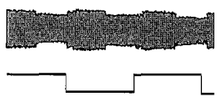
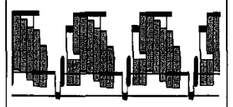
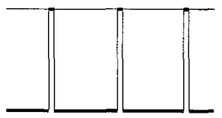
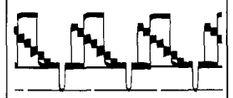
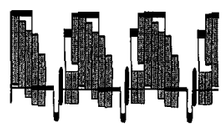
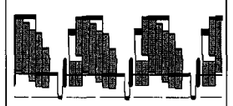
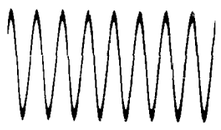
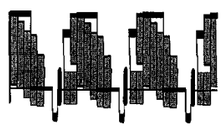
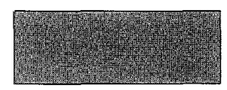
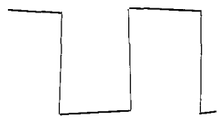
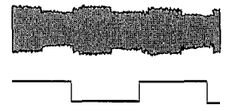
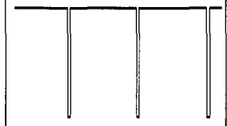
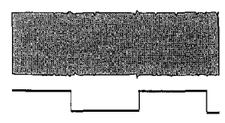
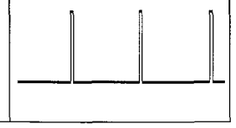
JK0200
AV IN/OUT

1	
2	5V
3	GND(VIDEO)
4	VIDEO
5	TX DATA
6	CAM SW
7	VIDEO
8	+B IN
9	GND(POWER)
10	S.EDIT
11	RX DATA
12	REM.DATA
13	AV CONT.
14	GND(AUDIO)
15	AUDIO(L)
16	AUDIO(R)
17	REMOTE
18	GND(AUDIO)
19	AUDIO(L)
20	AUDIO(R)

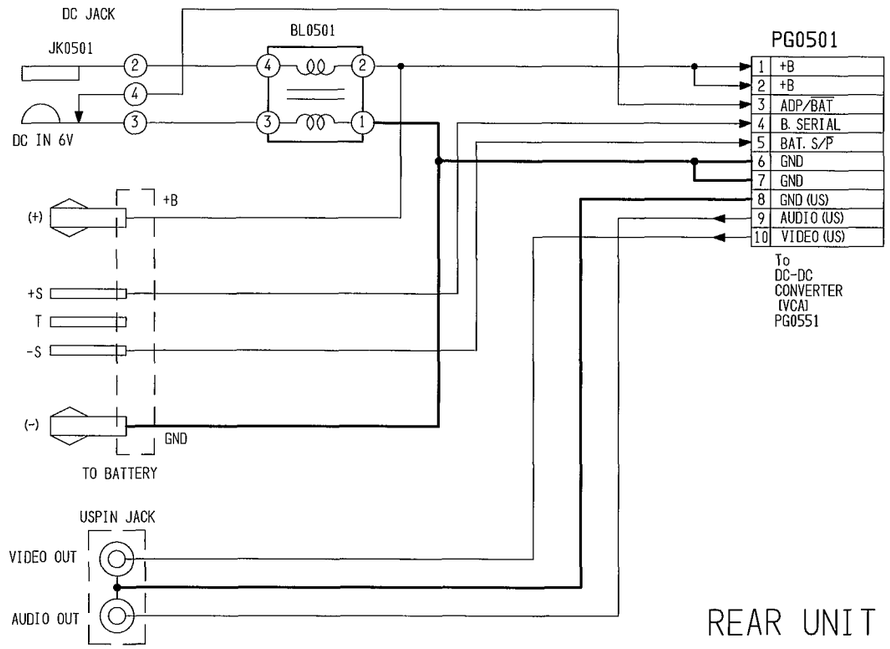
Y/CHROMA [VCA] SCHEMATIC DIAGRAM [TYPE 630,835]



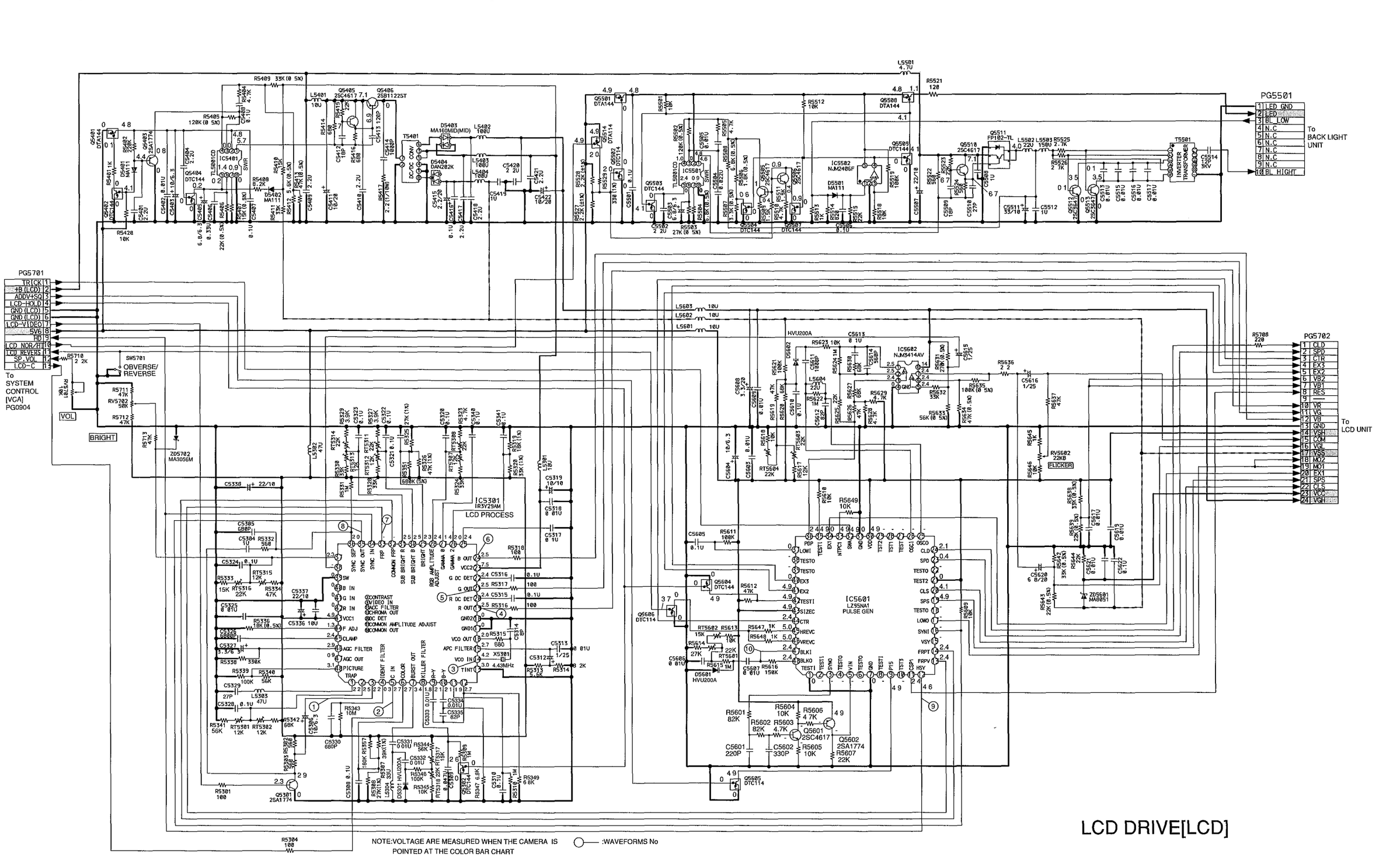
WAVEFORMS [VIDEO]

1-B IC101-22 300mVp-p 0 2V/5 0msec cm PLAY	8-B IC201-10 310mVp-p 0 2V/5 0msec.cm PLAY	15-A IC201-39 610mVp-p 0 2V/20 0µsec cm REC/PLAY	21-A IC204-3 2 0Vp-p 0.5V/20.0µsec.cm REC
			
2-B IC101-27 200mVp-p 0 1V/5 0msec.cm PLAY	9-A IC201-19 400mVp-p 0 2V/20 0µsec cm REC/PLAY	16-A IC201-47 4.8Vp-p 1V/20 0µsec.cm REC/PLAY	21-B IC204-3 2.2Vp-p 0.5V/20.0µsec.cm PLAY
			
3-A IC102-6 380mVp-p 0.1V/20 0µsec.cm REC	10-A IC201-22 400mVp-p 0.2V/20 0µsec cm REC/PLAY	17-A IC201-49 1 0Vp-p 0 2V/20.0µsec.cm REC	22-A IC204-4 2 0Vp-p 0.5V/20 0µsec.cm REC/PLAY
			
4-A IC102-11 520mVp-p 0 2V/20 0µsec cm REC	11-A IC201-23 750mVp-p 0 2V/200nsec cm REC/PLAY	18-A IC201-51 1 1Vp-p 0.2V/20 0µsec cm REC	23-B IC204-7 1.2Vp-p 0 5V/20.0µsec.cm PLAY
			
5-A IC102-15 700mVp-p 0 2V/20 0µsec.cm REC	12-A IC201-27 3 0Vp-p 1V/5.0msec cm REC/PLAY	18-B IC201-51 1 2Vp-p 0.2V/20.0µsec cm PLAY	24-A IC204-8 2.1Vp-p 0 5V/20 0µsec.cm REC/PLAY
			
6-B IC102-22 340mVp-p 0 2V/5 0msec cm PLAY	13-A IC201-36 110mVp-p 50mV/20 0µsec.cm REC/PLAY	19-A IC201-53 350mVp-p 0.1V/20 0µsec.cm REC/PLAY	25-A IC204-9 4 6Vp-p 1V/5 0msec cm REC/PLAY
			
7-B IC201-8 560mVp-p 0 2V/5.0msec cm PLAY	14-A IC201-38 200mVp-p 50mV/20 0µsec cm REC/PLAY	20-A IC201-54 490mVp-p 0 1V/20.0µsec cm REC/PLAY	26-A IC204-10 2 5Vp-p 1V/5.0msec cm REC/PLAY
			

REAR UNIT

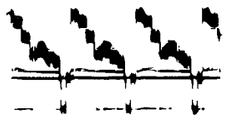
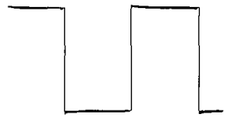
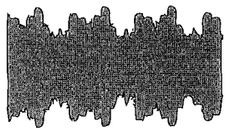
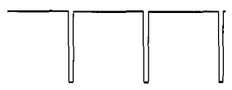
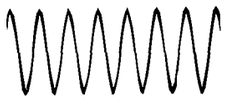
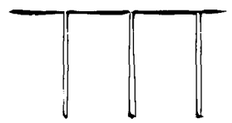
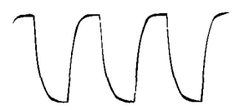


LCD DRIVE [LCD] SCHEMATIC DIAGRAM [TYPE 535,635,835]

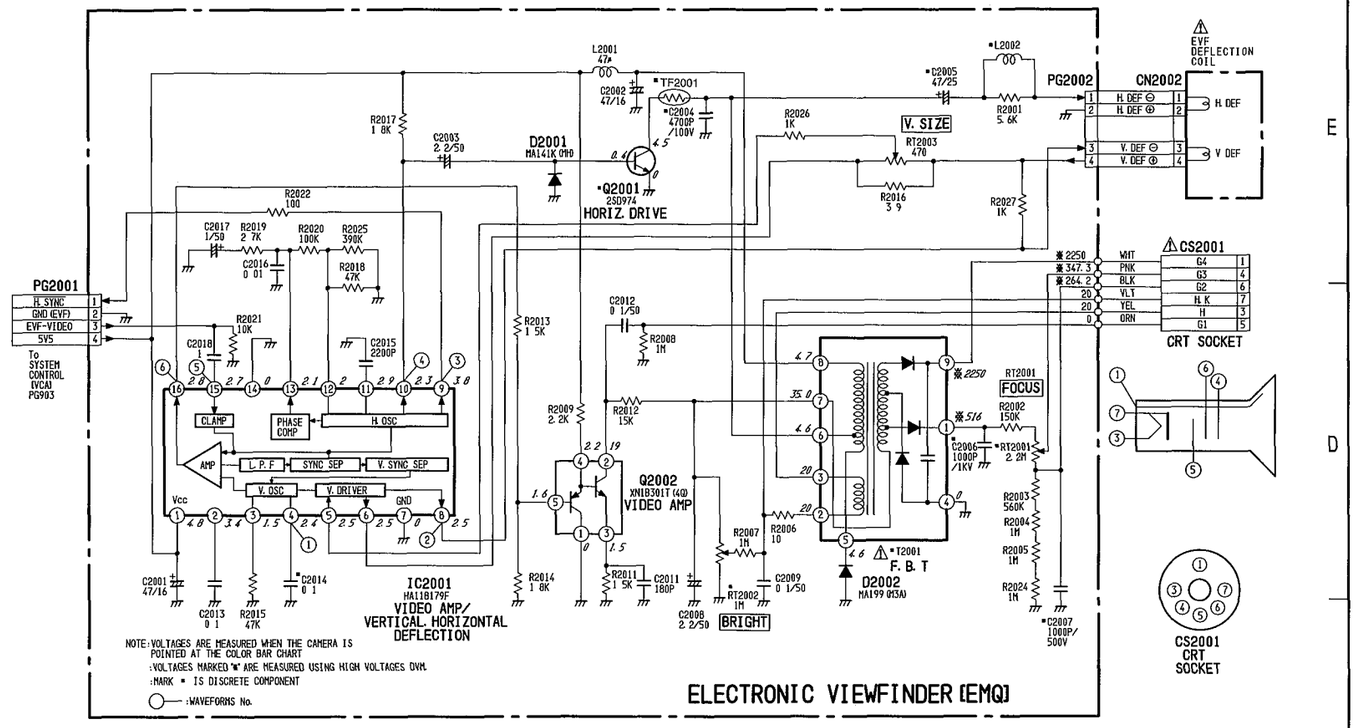


LCD DRIVE[LCD]

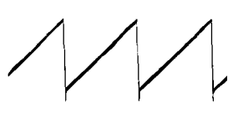
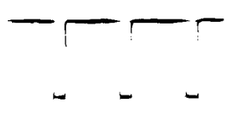
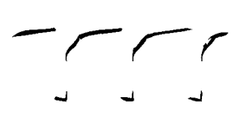
WAVEFORMS [LCD]

1-A IC5301-3 1.0Vp-p 0.2V/20.0sec.cm COLOR CHART	6-A IC5301-24 4 3Vp-p 1V/20 0µsec.cm COLOR CHART
	
1-B IC5301-3 500mVp-p 0.1V/20.0µsec cm VIDEO IN	7-A IC5301-33 5 0Vp-p 1V/20.0µsec cm COLOR CHART
	
2-A IC5301-5 1.1Vp-p 0.2V/20 0µsec cm COLOR CHART	8-A IC5301-35 4.9Vp-p 1V/20.0µsec cm COLOR CHART
	
3-A IC5301-14 400mVp-p 0.1V/200nsec.cm COLOR CHART	9-A IC5601-12 5 0Vp-p 1V/20.0µsec.cm COLOR CHART
	
4-A IC5301-19 4 3Vp-p 1V/20.0µsec cm COLOR CHART	10-A IC5601-47 4.3Vp-p 1V/20.0µsec cm COLOR CHART
	
5-A IC5301-21 4.3Vp-p 1V/20.0µsec cm COLOR CHART	

ELECTRONIC VIEWFINDER [EMQ] SCHEMATIC DIAGRAM

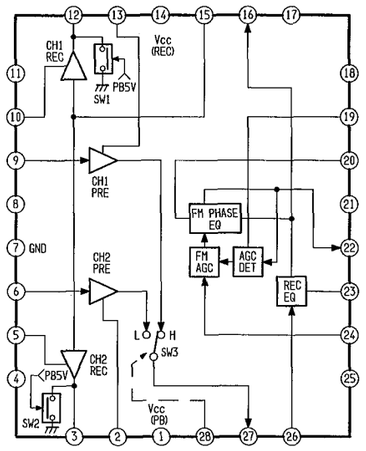


WAVEFORMS [EMQ]

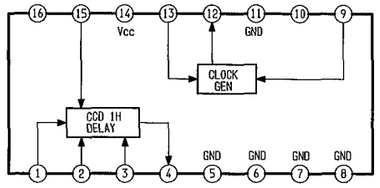
1-A IC2001-4 870mVp-p 0.2V/5 0msec.cm COLOR CHART	2-A IC2001-8 2.2Vp-p 0 5V/5 0msec.cm COLOR CHART	3-A IC2001-9 1.9Vp-p 0.5V/20.0µsec.cm COLOR CHART
		
4-A IC2001-10 1.7Vp-p 0.5V/20.0µsec cm COLOR CHART	5-A IC2001-15 1.0Vp-p 0.2V/20 0µsec.cm COLOR CHART	6-A IC2001-16 2.9Vp-p 1V/20.0µsec.cm COLOR CHART
		

IC BLOCK DIAGRAMS

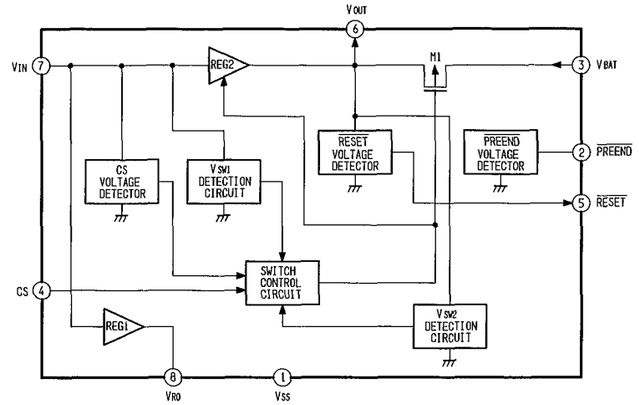
IC101
HA118189MPER
VIDEO HEAD SW



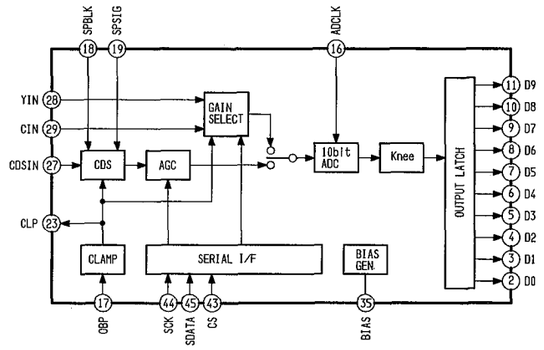
IC202
CXL5516N
1H DELAY



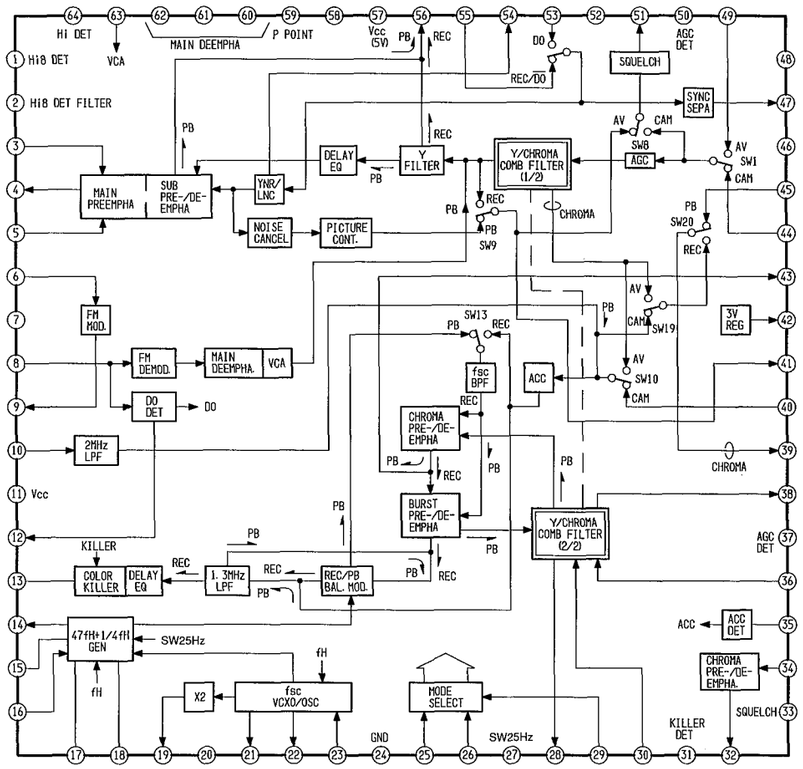
IC902
S84233FS
BACK-UP DET



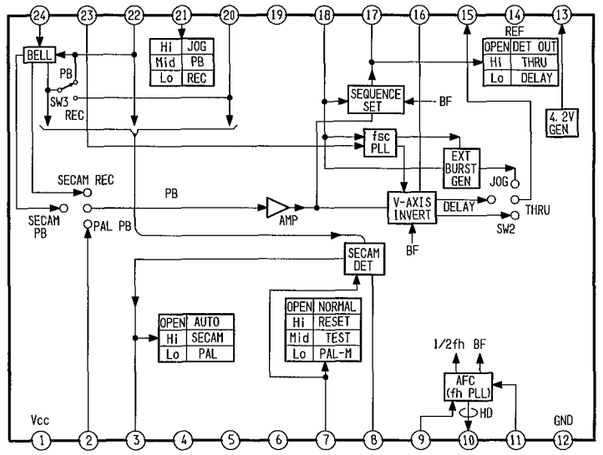
IC1101
HD49322F
CDS/DAC



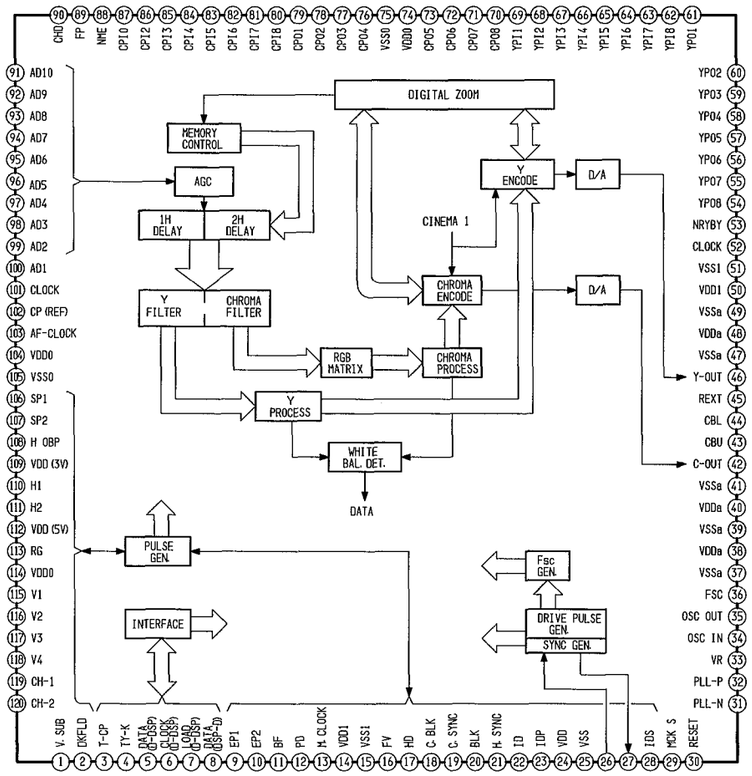
IC201
HA119192AF
Y/CHROMA PROCESS



IC301
CXA2003N
SKEW COMPE.

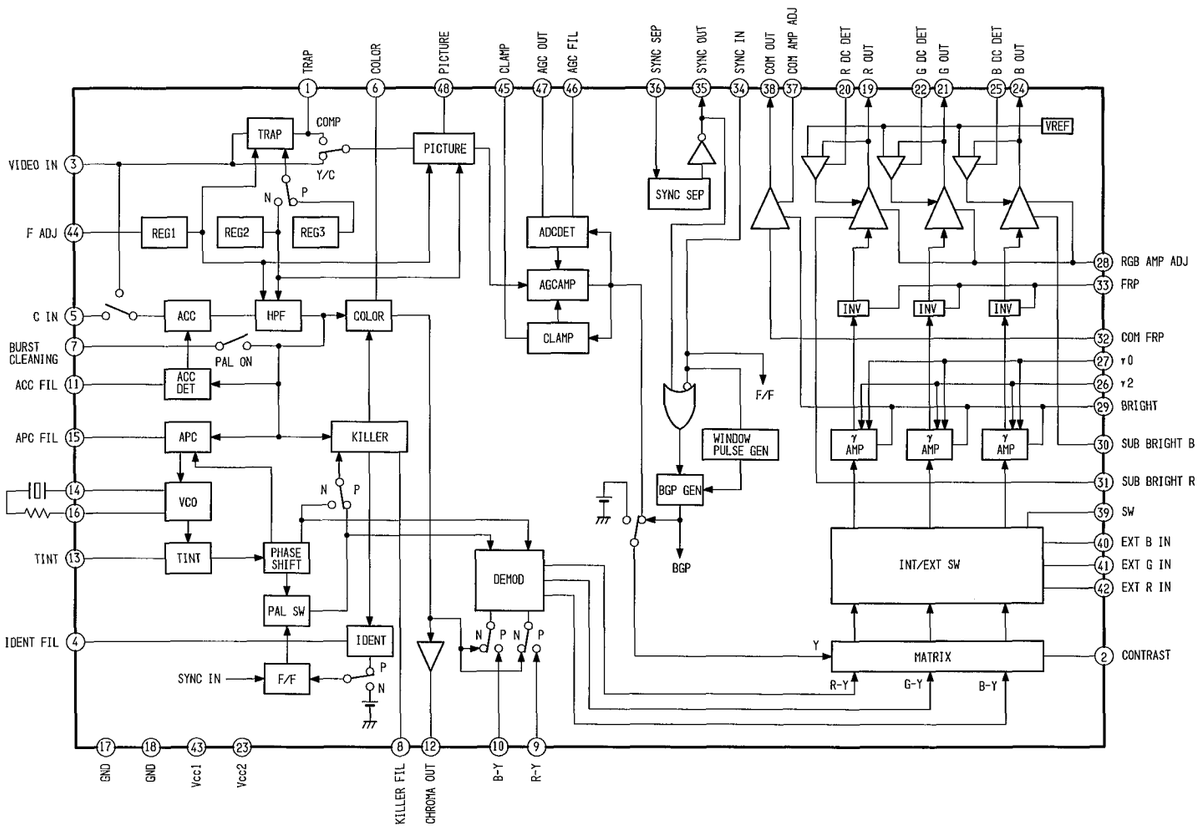


IC1102
HG51CS035TE
DIGITAL PROCESS (DSP)

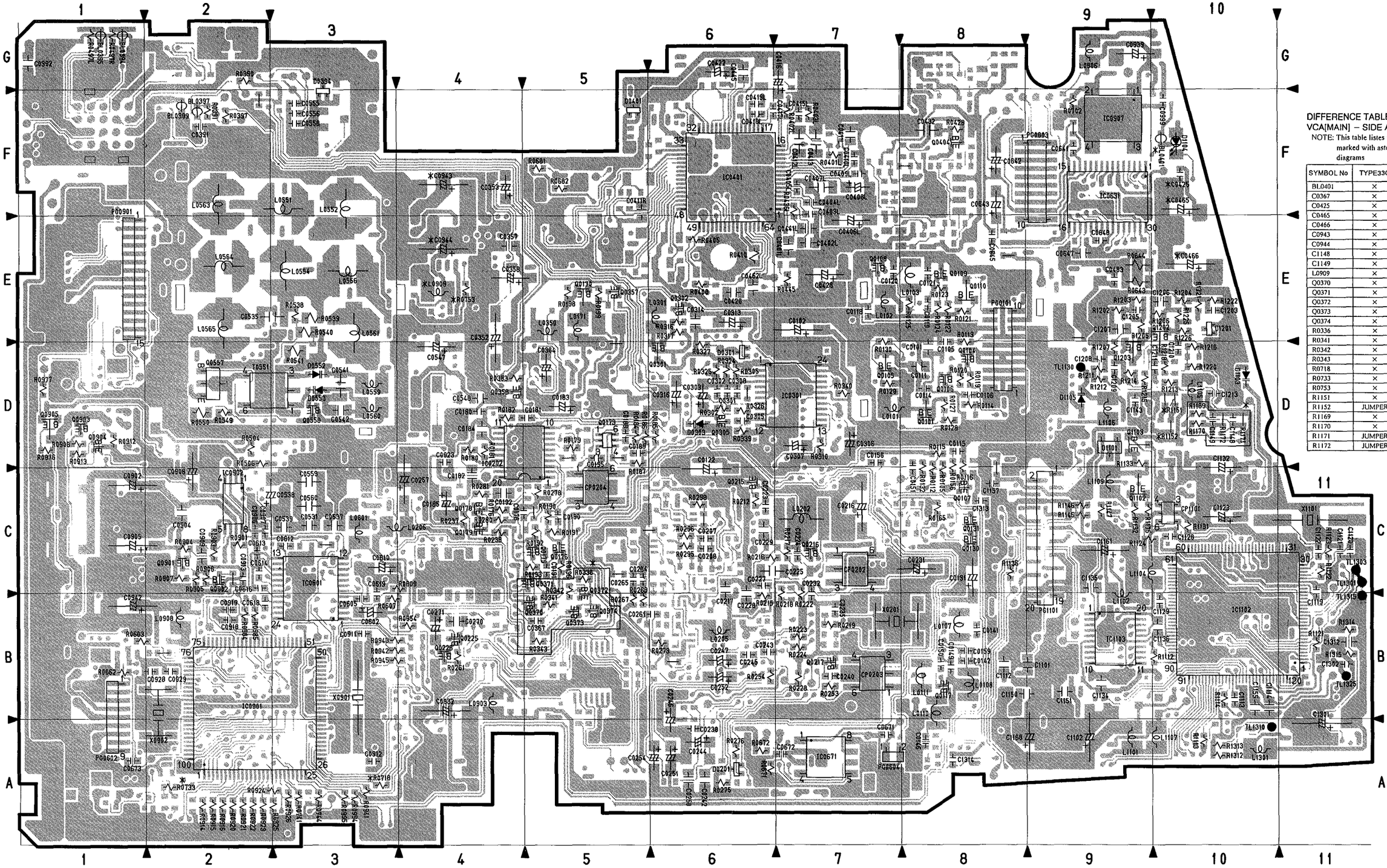


IC BLOCK DIAGRM

IC5301
1R3Y29AM
LCD PROCESS



VCA CIRCUIT BOARD -SIDE･A-
[TYPE 330,535,635]



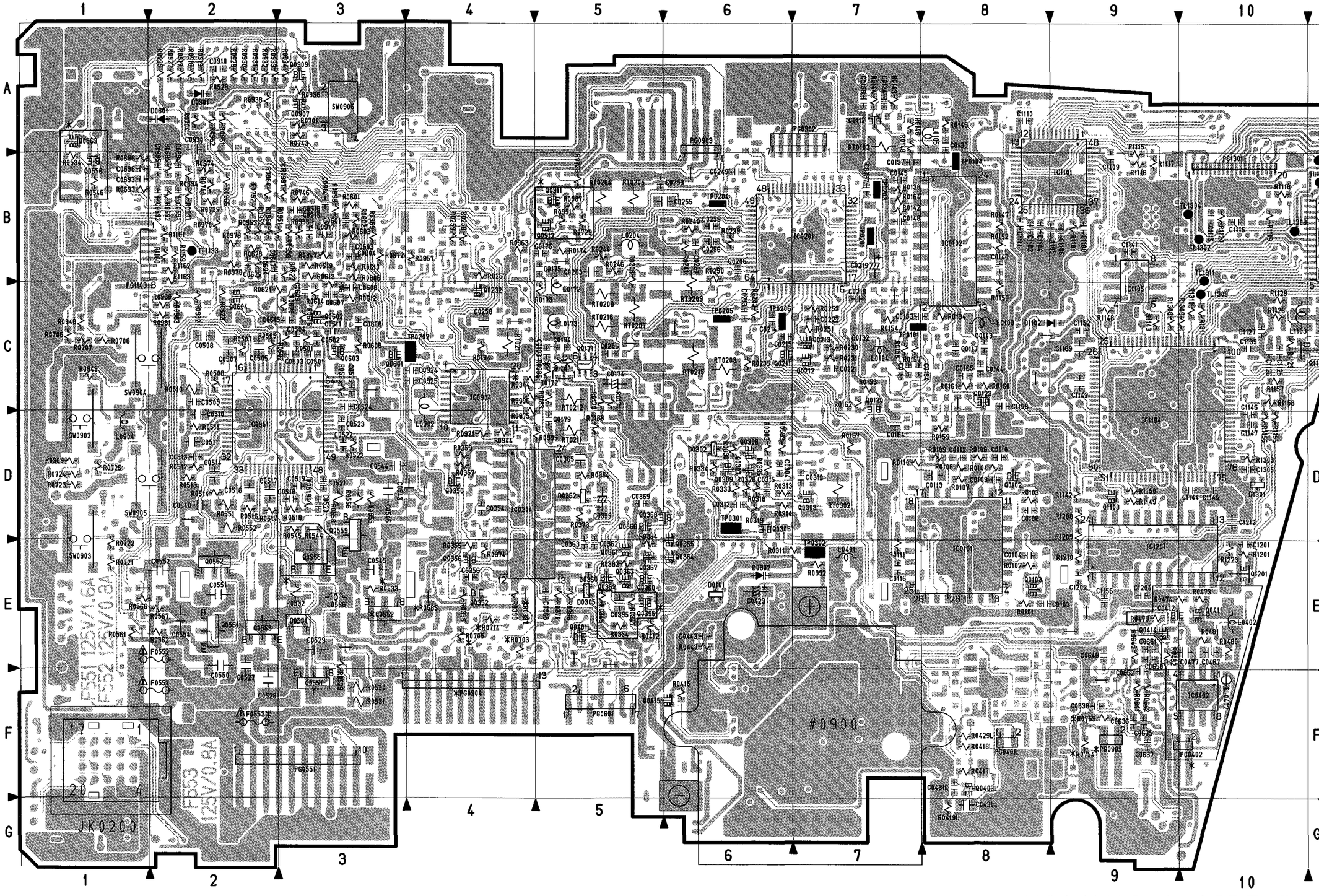
DIFFERENCE TABLE
VCA[MAIN] – SIDE A –

NOTE: This table listes the different components marked with asterisks (＊) in the circuit board diagrams

SYMBOL No	TYPE330	TYPE535	TYPE635
BL0401	×	○	○
C0367	×	○	○
C0425	×	○	○
C0465	×	○	○
C0466	×	○	○
C0943	×	○	○
C0944	×	○	○
C1148	×	×	○
C1149	×	×	○
L0909	×	○	○
Q0370	×	○	○
Q0371	×	○	○
Q0372	×	○	○
Q0373	×	○	○
Q0374	×	○	○
R0336	×	○	○
R0341	×	○	○
R0342	×	○	○
R0343	×	○	○
R0718	×	○	○
R0733	×	○	○
R0753	×	○	○
R1151	×	×	JUMPER
R1152	JUMPER	JUMPER	×
R1169	×	×	○
R1170	×	×	○
R1171	JUMPER	JUMPER	×
R1172	JUMPER	JUMPER	×

VCA(MAIN)-SIDE A-
[PATTERN No.JA1381-5]

VCA CIRCUIT BOARD -SIDE･B-
[TYPE 330,535,635]



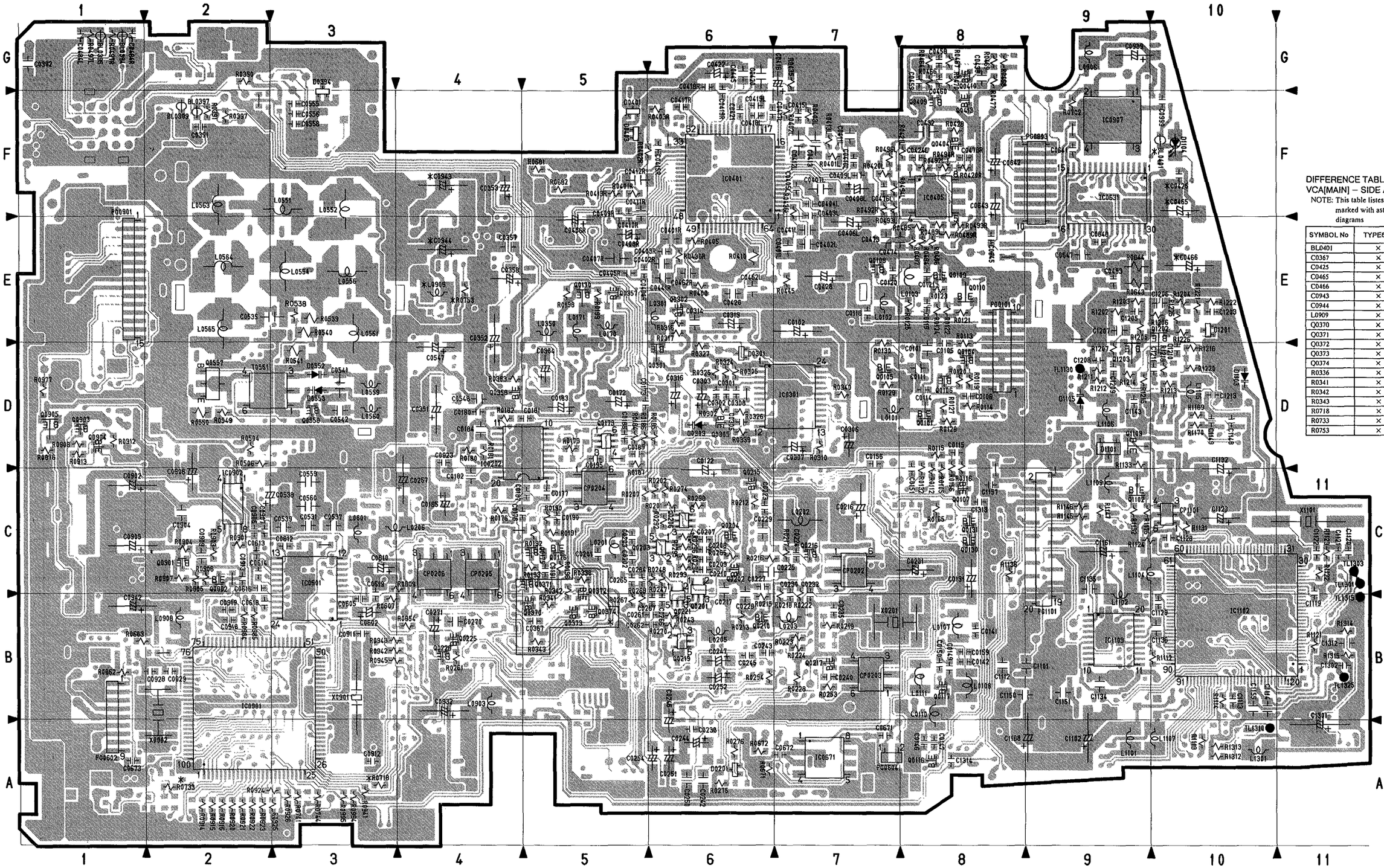
DIFFERENCE TABLE
VCA[MAIN] – SIDE B –

NOTE: This table listes the different components marked with asterisks (＊) in the circuit board diagrams

SYMBOL No	TYPE330	TYPE535	TYPE635
BL0402	×	○	○
C0395	×	×	○
C0467	×	○	○
C0477	×	○	○
F0553	×	○	○
IC0402	×	○	○
L0402	×	○	○
PG0402	×	○	○
PG0904	×	○	○
PG0905	×	○	○
Q0395	×	×	○
Q0411	×	○	○
Q0412	×	○	○
Q0414	×	○	○
Q0552	×	○	○
Q0555	×	○	○
Q0556	×	○	○
Q0563	×	○	○
Q0911	×	○	○
Q0912	×	○	○
R0337	JUMPER	×	×
R0344	×	○	○
R0346	×	×	○
R0347	×	×	○
R0354	×	×	○
R0473	×	○	○
R0474	×	○	○
R0479	×	○	○
R0480	×	○	○
R0481	×	○	○
R0482	×	○	○
R0533	×	○	○
R0534	×	○	○
R0544	JUMPER	×	×
R0545	×	○	○
R0546	×	○	○
R0585	×	JUMPER	JUMPER
R0703	×	○	○
R0705	×	○	○
R0714	×	○	○
R0729	○	×	×
R0754	×	○	○
R0755	×	○	○
R0986	×	○	○
R0987	×	○	○
R0991	×	○	○
R0997	×	○	○

VCA(MAIN)-SIDE B-
[PATTERN No.JA1381-5]

VCA CIRCUIT BOARD -SIDE･A-
[TYPE 630,835]



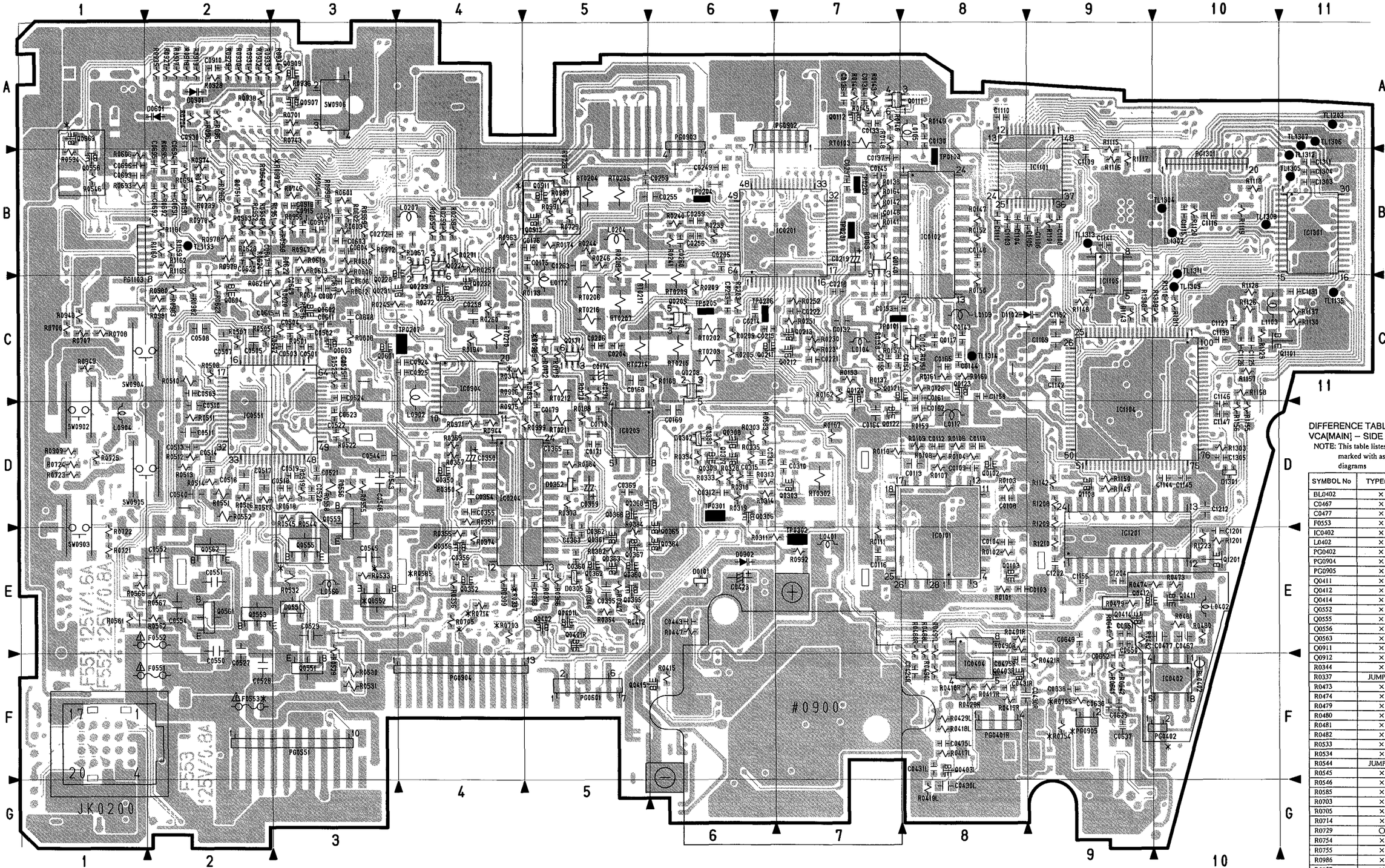
DIFFERENCE TABLE
VCA[MAIN] – SIDE A –

NOTE: This table listes the different components marked with asterisks (＊) in the circuit board diagrams

SYMBOL No	TYPE630	TYPE835
BL0401	×	○
C0367	×	○
C0425	×	○
C0465	×	○
C0466	×	○
C0943	×	○
C0944	×	○
L0909	×	○
Q0370	×	○
Q0371	×	○
Q0372	×	○
Q0373	×	○
Q0374	×	○
R0336	×	○
R0341	×	○
R0342	×	○
R0343	×	○
R0718	×	○
R0733	×	○
R0753	×	○

VCA(MAIN)-SIDE A-
[PATTERN No.JA1381-5]

VCA CIRCUIT BOARD -SIDE･B-
[TYPE 630,835]

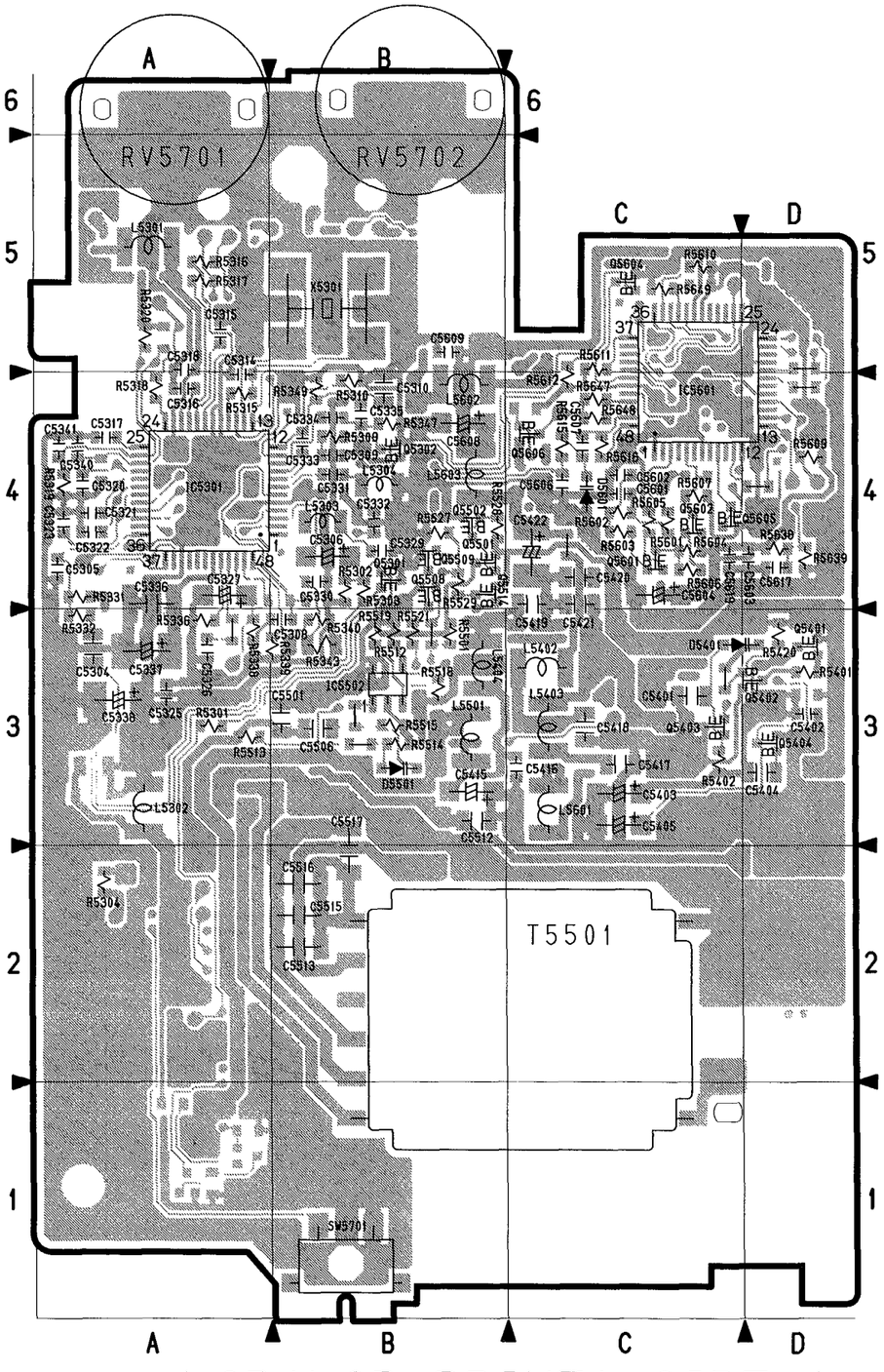


DIFFERENCE TABLE
VCA[MAIN] – SIDE B –

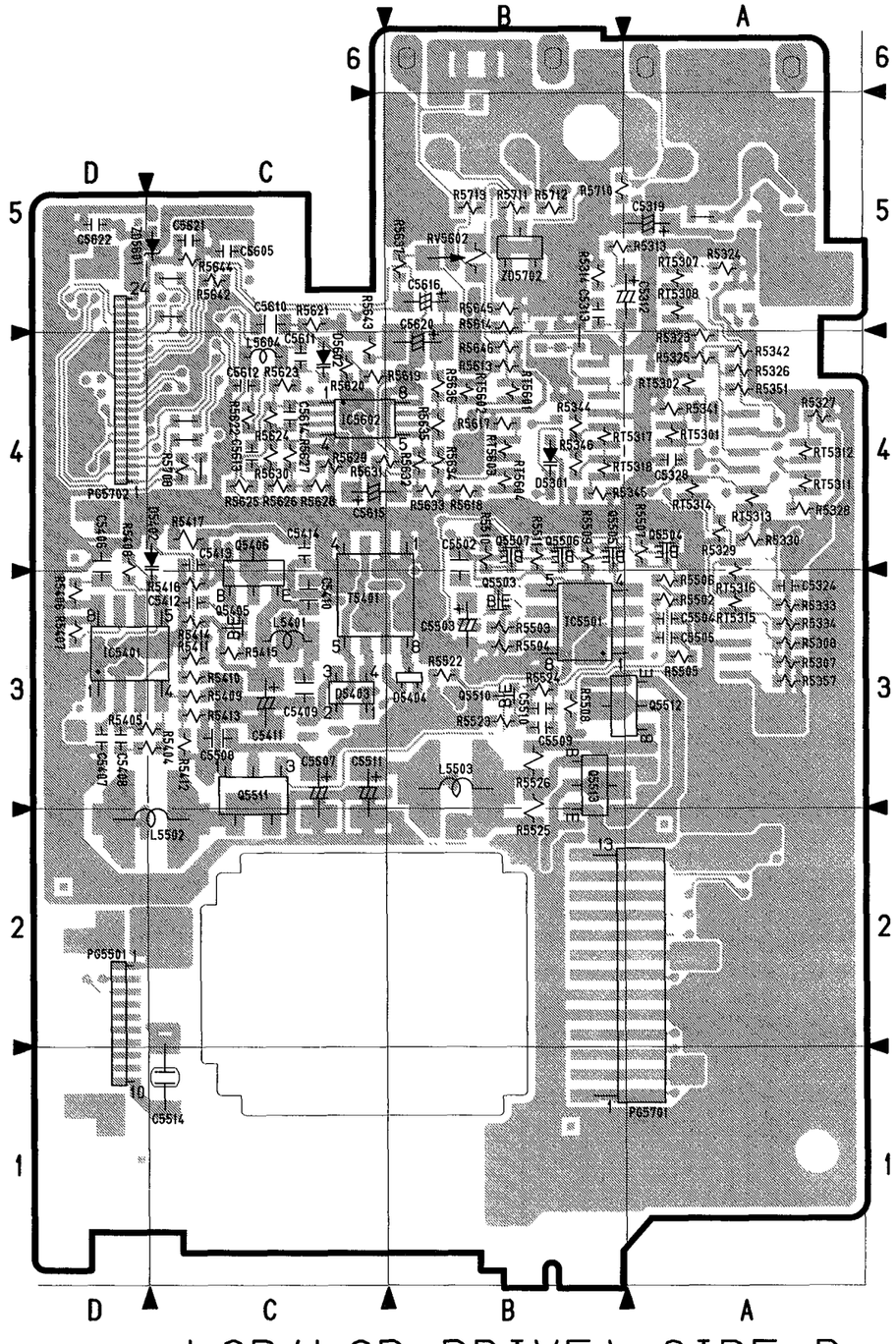
NOTE: This table listes the different components marked with asterisks (＊) in the circuit board diagrams

SYMBOL No	TYPE630	TYPE835
BL0402	×	○
C0467	×	○
C0477	×	○
F0553	×	○
IC0402	×	○
L0402	×	○
PG0402	×	○
PG0904	×	○
PG0905	×	○
Q0411	×	○
Q0412	×	○
Q0414	×	○
Q0552	×	○
Q0555	×	○
Q0556	×	○
Q0563	×	○
Q0911	×	○
Q0912	×	○
R0344	×	○
R0337	JUMPER	×
R0473	×	○
R0474	×	○
R0479	×	○
R0480	×	○
R0481	×	○
R0482	×	○
R0533	×	○
R0534	×	○
R0544	JUMPER	×
R0545	×	○
R0546	×	○
R0585	×	JUMPER
R0703	×	○
R0705	×	○
R0714	×	○
R0729	○	×
R0754	×	○
R0755	×	○
R0986	×	○
R0987	×	○
R0991	×	○
R0997	×	○
R0344	×	○

LCD CIRCUIT BOARD [TYPE 535,635,835]



LCD(LCD DRIVE)-SIDE A-

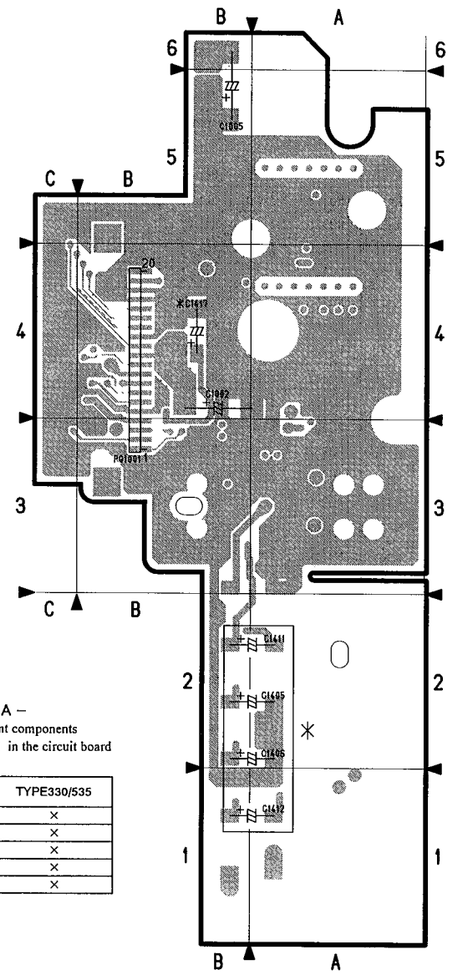


LCD(LCD DRIVE)-SIDE B-
[PATTERN No.JA1406-4]

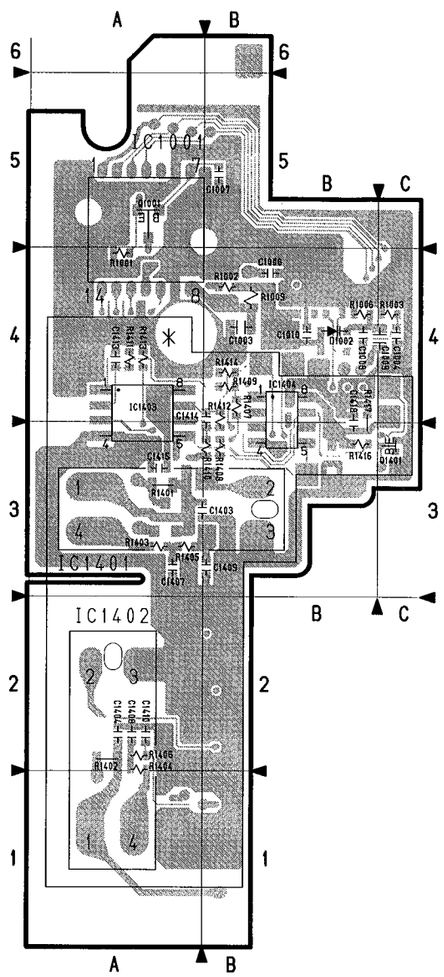
DIFFERENCE TABLE
SE[SENSOR/GYRO] – SIDE A –

NOTE: This table listes the different components marked with asterisks (*) in the circuit board diagrams

SYMBOL No	TYPE630/635/835	TYPE330/535
C1405	○	×
C1406	○	×
C1411	○	×
C1412	○	×
C1417	○	×



SE(SENSOR/GYRO)-SIDE A-
[PATTERN No.JA1381-5]

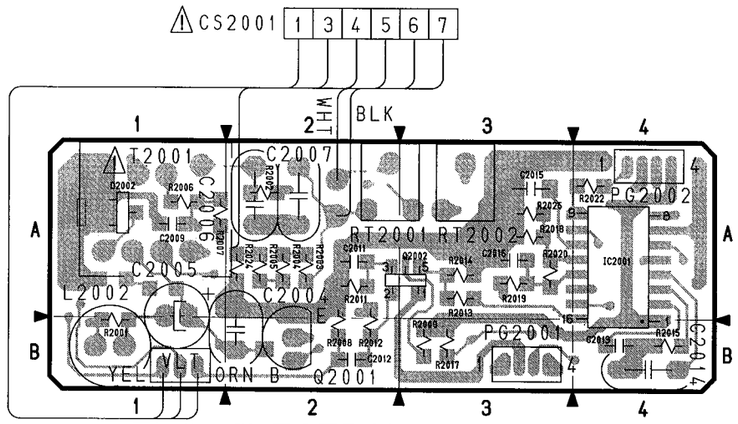


SE(SENSOR/GYRO)-SIDE B-
[PATTERN No.JA1381-5]

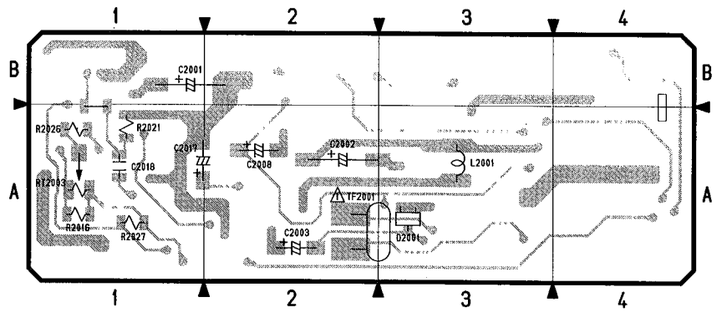
DIFFERENCE TABLE
SE[SENSOR/GYRO] – SIDE B –

NOTE: This table listes the different components marked with asterisks (*) in the circuit board diagrams

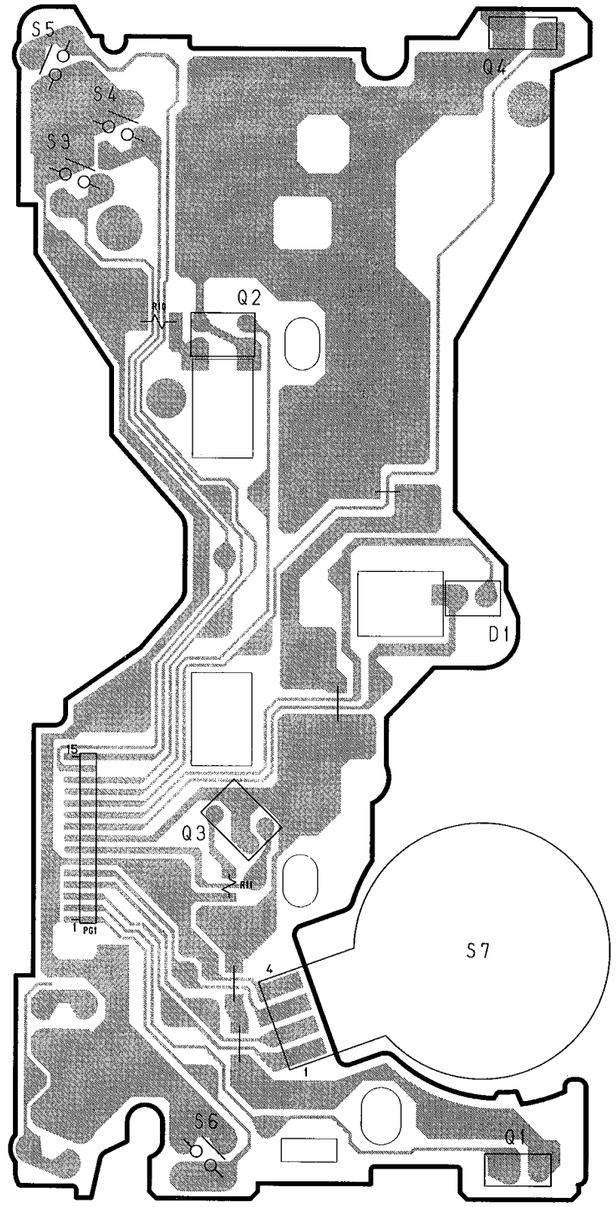
SYMBOL No	TYPE630/635/835	TYPE330/535
C1403	○	×
C1404	○	×
C1407	○	×
C1408	○	×
C1409	○	×
C1410	○	×
C1413	○	×
C1414	○	×
C1415	○	×
C1418	○	×
IC1401	○	×
IC1402	○	×
IC1403	○	×
IC1404	○	×
Q1401	○	×
R1401	JUMPER	×
R1402	JUMPER	×
R1403	○	×
R1404	○	×
R1405	○	×
R1406	○	×
R1407	○	×
R1408	○	×
R1409	○	×
R1410	○	×
R1411	○	×
R1412	○	×
R1413	○	×
R1414	○	×
R1416	○	×
R1417	JUMPER	×



EMQ(ELECTRONIC VIEWFINDER)
-SIDE A-
[PATTERN No.152035-2]



EMQ(ELECTRONIC VIEWFINDER)
-SIDE B-



TROUBLE SENSOR(HTS9551C)
[PATTERN No.155190-2]

IDENTIFICATION OF PARTS LOCATION

VCA [MAIN] (TYPE 330, 535, 635) 1/3

Symbol No	Parts Location
BL	
BL0394	A-1G
BL0395	A-1G
BL0397	A-2F
BL0399	A-2F
BL0401	A-10F
BL0402	B-10F
C	
C0101	A-8D
C0102	A-7E
C0103	B-8E
C0104	B-8E
C0105	A-8D
C0106	A-8D
C0108	B-8D
C0109	B-8D
C0110	B-8D
C0111	A-8D
C0112	B-8D
C0113	B-8D
C0114	A-8D
C0115	A-8D
C0116	B-7E
C0117	B-8C
C0118	A-7E
C0119	A-8E
C0120	A-7E
C0121	A-8E
C0122	A-6C
C0130	B-8A
C0131	A-8C
C0132	B-7C
C0134	B-7A
C0136	B-7A
C0137	B-7B
C0140	B-8B
C0141	A-8B
C0142	A-8B
C0143	B-8C
C0144	B-8C
C0145	B-7B
C0146	A-8A
C0148	B-7B
C0149	A-8B
C0150	A-8B
C0151	A-8C
C0153	B-7C
C0154	B-7C
C0155	B-7C
C0156	A-7D
C0159	A-8B
C0164	B-7D
C0165	B-8C
C0174	B-5C
C0175	B-5B
C0176	B-5B
C0178	A-5C
C0179	B-5D
C0180	A-4D
C0181	A-5D
C0182	A-4C
C0183	A-5D
C0184	A-4D
C0185	A-4C
C0188	A-5D
C0189	A-5D
C0190	A-5C
C0191	A-5C
C0192	A-4C
C0193	B-5C
C0194	B-5C
C0195	A-5D
C0205	B-6B
C0206	B-5C
C0207	A-6C
C0208	A-6C
C0213	B-6C
C0214	B-6C
C0215	B-6C
C0216	A-7C
C0217	A-6C
C0218	B-7C
C0219	B-7B
C0221	B-7C
C0222	B-7C
C0223	A-6C
C0224	A-7C
C0225	A-6C
C0227	A-6C
C0228	A-6B
C0229	A-6C
C0231	A-8C
C0232	A-7B
C0235	A-7B
C0237	B-7B
C0238	A-6A
C0240	A-7B
C0242	A-6A
C0243	A-6B
C0244	A-6A
C0245	A-6B
C0246	A-6A
C0247	A-6B
C0249	B-6B
C0250	A-6A
C0251	A-6A
C0252	A-6B
C0253	B-5B
C0254	A-6A
C0255	B-6B
C0256	B-6B
C0257	A-4C
C0258	B-4C
C0259	B-6B
C0260	B-6B
C0261	A-6B
C0263	B-5B
C0264	A-5C
C0265	A-5C
C0270	A-4B
C0271	A-4B
C0301	A-6D
C0302	A-6D
C0303	A-6D
C0304	B-6D
C0305	A-6D
C0306	A-7D
C0307	A-7D
C0308	A-6D
C0310	B-7D
C0312	B-6D
C0313	A-6E
C0314	A-6E
C0315	B-6D
C0316	A-6D
C0352	A-4E
C0353	A-4F
C0354	B-4D
C0356	B-4E
C0357	A-4E
C0358	A-4E
C0359	B-5D
C0360	B-5E
C0362	B-5E
C0363	B-5E
C0364	A-5D
C0365	B-5D
C0367	A-5B
C0368	B-5E
C0369	B-5D
C0391	A-2F
C0392	A-1G
C0395	B-5E
C0401L	A-7E
C0402L	A-7E
C0403L	A-7F
C0404L	A-7F
C0405L	A-7F
C0406L	A-7E
C0407L	A-7F
C0408L	A-7F
C0409L	A-7F
C0410L	A-7F
C0411L	A-7F
C0411R	A-5F
C0412L	A-7F
C0413	A-7F
C0415L	A-7F
C0416	A-7G
C0417L	A-6F
C0418L	A-6F
C0419L	A-6F
C0422	A-6G
C0423	B-6E
C0425	A-10F
C0426	A-6E
C0428	A-7E
C0430L	B-8G
C0431L	B-8F
C0432	A-8F
C0441L	A-7E
C0443	B-6E
C0445	A-6G
C0462L	A-6E
C0465	A-10F
C0466	A-10E
C0467	B-10E
C0477	B-10E
C0483	A-9E
C0501	B-3C
C0502	B-3C
C0503	B-3C
C0504	B-3C
C0505	B-2C
C0507	B-2C
C0508	B-2C
C0509	B-2C
C0510	B-2D
C0511	B-2D
C0513	B-2D
C0514	B-2D
C0516	B-2D
C0517	B-2D
C0518	B-3D
C0519	B-3D
C0520	B-3D
C0521	B-3D
C0522	B-3D
C0523	B-3D
C0524	B-3C
C0525	B-3C
C0527	B-2E
C0528	B-2F
C0529	B-3E
C0531	A-3C
C0535	A-3E
C0537	A-3C
C0538	A-2C
C0539	A-3C
C0540	B-2D
C0541	A-3D
C0542	A-3D
C0543	B-4D
C0544	B-3D
C0545	B-3E
C0546	B-3D
C0547	A-4D
C0548	A-4D
C0550	B-2E
C0551	B-2E
C0552	B-2E
C0554	B-2E
C0555	A-3F
C0556	A-3F
C0558	A-3F
C0559	A-3C
C0560	A-3C
C0601	B-3B
C0602	A-3B
C0603	B-3B
C0604	B-3B
C0605	A-3B
C0606	B-3C
C0607	B-3C
C0608	B-3C
C0609	B-3C
C0610	A-3C
C0611	B-3C
C0612	A-3C
C0613	A-2C
C0614	A-2C
C0615	B-3C
C0616	A-2C
C0617	B-2B
C0618	A-2B
C0619	A-3B
C0622	B-2B
C0635	B-9F
C0636	B-9F
C0637	B-9F
C0638	B-9F
C0641	A-9F
C0642	A-8F
C0643	A-8F
C0645	A-8E
C0647	A-9E
C0648	A-9E
C0649	B-9E
C0650	B-9E
C0651	B-9E
C0652	B-9F
C0671	A-7A
C0672	A-7A
C0673	A-1A
C0691	B-2B
C0692	B-2B
C0693	B-1B
C0694	B-2B
C0695	B-2B
C0696	B-1B
C0902	A-1C
C0904	A-2C
C0905	A-1C
C0906	A-2C
C0907	A-2C
C0908	A-2C
C0909	A-2C
C0910	B-2A
C0911	A-3B
C0912	A-3A
C0913	A-2C
C0914	B-3B
C0915	B-3B
C0916	B-3B
C0917	B-3B
C0918	A-2B
C0919	A-2B
C0923	A-4D
C0924	B-4C
C0925	B-4C
C0928	A-2B
C0929	A-2B
C0930	B-2A
C0932	A-4B
C0939	A-9G
C0942	A-1B
C0943	A-4F
C0944	A-4E
C0999	A-10F
C1101	A-9B
C1102	A-9A
C1103	B-8B
C1104	B-8B
C1105	B-9B
C1106	B-9B
C1108	B-9B
C1109	B-9B
C1110	B-8A
C1111	B-8B
C1112	A-8B
C1113	A-10B
C1114	A-10B
C1115	B-10B
C1116	B-10B
C1119	A-11C
C1120	A-11C
C1121	A-11C
C1122	A-11C
C1123	A-10C
C1125	B-10C
C1126	B-10C
C1127	B-10C
C1128	A-10C
C1129	A-10B
C1131	B-11C
C1132	A-10C
C1134	A-9B
C1135	A-9C
C1136	A-10B
C1139	B-10C
C1141	B-9B
C1142	B-9C
C1143	A-9D
C1144	B-10D
C1145	B-10D
C1146	B-10D
C1147	B-10D
C1148	A-10D
C1149	A-10D
C1150	A-9B
C1151	A-9B
C1152	B-9C
C1155	A-10B
C1156	B-9E
C1157	A-8C
C1158	B-8C
C1161	A-9C
C1168	A-9A
C1169	B-9C
C1201	B-10E
C1202	B-9E
C1203	A-10E
C1204	B-9E
C1205	A-9E
C1206	A-10E
C1207	A-9E
C1208	A-9D
C1209	A-9D
C1210	A-10D
C1211	A-10D
C1212	B-10D
C1213	A-10D
C1301	A-11A
C1302	A-11B
C1303	B-11B
C1304	B-11B
C1305	B-10D
C1311	B-11B
C1312	A-11B
C1313	A-8C
C1314	A-8A
CP	
CP0202	A-7C
CP0203	A-7B
CP0204	A-5C
CP1101	A-10C
D	
D0101	B-6E
D0201	A-6A
D0301	A-6D
D0302	B-6D
D0303	A-6D
D0305	B-5E
D0352	B-5D
D0394	A-3F
D0401	A-5F
D0551	B-3E
D0552	A-3D
D0553	A-3D
D0601	B-2A
D0901	B-2A
D0902	B-6E
D1101	A-9D
D1102	B-9C
D1103	A-10D
D1104	A-10F
D1105	A-9D
D1201	A-10E
D1301	B-10D
F	
F0551	B-2F
F0552	B-2E
F0553	B-2F
IC	
IC0101	B-8E
IC0102	B-8B
IC0201	B-7B
IC0202	A-5D
IC0204	B-4D
IC0301	A-7D
IC0401	A-6F
IC0402	B-10F
IC0551	B-3D
IC0601	A-3C
IC0631	A-9F
IC0671	A-7A
IC0901	A-2B
IC0902	A-2C
IC0904	B-4C
IC0907	A-9F
IC1101	B-9B
IC1102	A-10B
IC1103	A-9B
IC1104	B-9C
IC1105	B-9B
IC1201	B-9E
IC1301	B-11B
JK	
JK0200	B-1F
L	
L0101	A-7D
L0102	A-7E
L0103	A-8E
L0104	B-7C
L0105	B-8A
L0107	A-8B
L0108	A-8B
L0109	B-8C
L0110	A-8B
L0111	A-8B
L0171	A-5E
L0172	B-5C
L0173	B-5C
L0202	A-7C
L0204	B-5B
L0205	A-6B
L0206	A-3C
L0301	A-6E
L0350	A-5E
L0401	B-7E
L0402	B-10E
L0551	A-3F
L0552	A-3F
L0554	A-3E
L0556	A-3E
L0559	A-3D
L0560	A-3D
L0561	A-3E
L0563	A-2F
L0564	A-2E
L0565	A-2E
L0566	B-3E
L0601	A-3C
L0902	B-4C
L0903	A-4B
L0904	B-1D
L0906	A-9G
L0908	A-2B
L0909	A-4E
L1101	A-9A
L1102	A-9B
L1103	B-10C
L1104	A-10C
L1105	A-10D
L1106	A-9D
L1107	A-10A
L1109	A-9C
L1301	A-10A
PG	
PG0101	A-8D
PG0401L	B-8F
PG0402	B-10F
PG0551	B-3F
PG0601	B-5F
PG0602	A-1B
PG0603	A-9F
PG0604	A-7A
PG0901	A-1E
PG0902	B-7A
PG0903	B-6A
PG0904	B-4F
PG0905	B-9F
PG1101	A-9C
PG1103	B-1B
PG1301	B-10B
Q	
Q0101	A-8D
Q0102	B-8D
Q0103	B-8E
Q0104	A-8D
Q0105	A-7D
Q0106	A-8D
Q0107	A-8C

VCA [MAIN] (TYPE 330, 535, 635) 2/3

Symbol No	Parts Location
Q0108	A-7E
Q0109	A-8E
Q0110	A-8E
Q0112	B-7A
Q0117	A-8B
Q0120	B-7C
Q0123	B-8C
Q0130	A-8C
Q0131	A-8C
Q0170	A-5E
Q0171	B-5C
Q0173	A-5D
Q0175	A-5C
Q0176	A-5C
Q0178	A-4C
Q0179	A-4C
Q0211	B-6C
Q0212	B-7C
Q0213	B-7C
Q0215	A-6C
Q0216	A-7C
Q0217	A-7B
Q0225	A-4B
Q0226	A-4B
Q0232	B-4C
Q0301	A-6D
Q0302	A-6E
Q0303	B-7D
Q0305	A-6D
Q0306	B-6D
Q0307	B-6D
Q0308	B-6D
Q0309	B-6D
Q0350	B-4D
Q0352	B-4E
Q0356	B-4E
Q0357	A-5E
Q0358	A-4D
Q0360	B-5E
Q0361	B-5E
Q0362	B-5E
Q0363	B-5E
Q0364	B-6E
Q0365	B-6E
Q0366	B-5D
Q0367	B-5E
Q0368	B-6D
Q0370	A-5B
Q0371	A-5C
Q0372	A-5B
Q0373	A-5B
Q0374	A-5B
Q0395	B-5E
Q0401L	B-5E
Q0403L	B-8F
Q0404	A-8F
Q0411	B-10E
Q0412	B-9E
Q0414	B-9E
Q0415	B-6F
Q0551	B-3F
Q0552	B-3E
Q0553	B-2E
Q0555	B-3E
Q0556	B-1B
Q0557	A-2D
Q0558	A-3D
Q0559	B-3D
Q0561	B-2E
Q0562	B-2E
Q0563	B-1A
Q0601	B-3C
Q0602	B-3C
Q0603	B-3C
Q0604	B-2C
Q0901	A-2C
Q0902	A-2C
Q0903	A-1D
Q0904	A-1D
Q0905	A-1D
Q0906	B-3A
Q0909	B-3A
Q0911	B-5B
Q0912	B-5B
Q1101	B-11C
Q1102	A-9C
Q1103	A-9D
Q1108	B-9D
Q1201	B-10E
Q1202	A-10E
Q1203	A-9D
R	
R0101	B-8E
R0102	B-8E
R0103	B-8D
R0104	B-8D
R0105	A-8C
R0106	B-8D
R0107	B-8D
R0108	B-8D
R0109	B-8D
R0110	B-7D
R0111	B-7E
R0112	A-8C
R0113	A-8D
R0114	A-8D
R0115	A-8D
R0116	A-8C
R0119	A-8D
R0120	A-8D
R0121	A-8E
R0122	A-8E
R0123	A-8E
R0124	A-8E
R0125	A-8E
R0127	A-8D
R0128	A-8D
R0129	A-7D
R0130	A-7D
R0132	A-8C
R0134	B-8C
R0138	B-7B
R0142	B-7B
R0143	B-7A
R0144	B-7A
R0146	B-7A
R0147	B-8B
R0148	B-7A
R0149	B-8A
R0150	B-8C
R0152	B-8B
R0153	B-7C
R0154	B-7C
R0156	A-8C
R0157	B-7C
R0158	B-7C
R0159	B-8D
R0160	B-8C
R0161	B-8C
R0162	B-7C
R0164	B-7B
R0165	A-8C
R0167	B-7D
R0170	B-5C
R0171	B-5C
R0172	B-5C
R0173	B-5C
R0174	B-5B
R0175	B-5C
R0176	A-4C
R0179	A-5D
R0180	A-4D
R0181	A-4D
R0182	A-4D
R0183	B-5C
R0184	A-5D
R0185	A-6D
R0186	A-5D
R0187	A-5D
R0188	B-5D
R0190	A-5C
R0191	A-5C
R0192	A-5C
R0193	A-5C
R0194	B-4C
R0196	A-5C
R0198	A-5E
R0199	A-5E
R0203	B-6C
R0205	B-6C
R0208	B-5B
R0212	A-6C
R0215	A-6B
R0216	A-6C
R0217	A-7C
R0218	A-7B
R0219	A-7B
R0222	A-7B
R0223	A-7B
R0224	A-7B
R0228	A-7B
R0230	B-7C
R0231	B-7C
R0237	A-4C
R0238	A-4C
R0239	B-6B
R0240	B-6B
R0241	B-6B
R0244	B-5B
R0246	B-5B
R0250	B-6B
R0251	B-7C
R0252	B-7C
R0253	A-7B
R0254	A-6B
R0257	B-4B
R0258	B-4B
R0259	B-4B
R0261	A-4B
R0267	A-5B
R0268	A-5B
R0273	A-6B
R0275	A-6A
R0276	A-6A
R0278	A-5C
R0280	A-4C
R0281	A-4C
R0295	A-6C
R0296	A-6C
R0298	A-6C
R0302	A-6D
R0303	B-6D
R0305	A-6D
R0310	A-7D
R0311	B-7E
R0313	B-6D
R0314	B-6D
R0316	A-6E
R0317	A-6E
R0318	B-6D
R0319	B-6D
R0324	A-6D
R0325	A-6D
R0326	A-6D
R0327	A-6D
R0328	B-6D
R0330	B-6D
R0333	B-6D
R0334	B-6D
R0335	B-6D
R0336	A-5C
R0337	B-4E
R0339	A-6D
R0340	A-7D
R0341	A-5B
R0342	A-5C
R0343	A-5B
R0344	B-4C
R0346	B-5E
R0347	B-5E
R0354	B-5E
R0355	B-4E
R0356	B-4E
R0357	B-4D
R0359	B-4D
R0364	B-5D
R0366	B-5E
R0371	B-5E
R0373	B-5D
R0374	B-4E
R0382	B-5E
R0383	A-4D
R0384	B-5E
R0390	A-2G
R0391	A-2F
R0397	A-2F
R0399	B-4E
R0401L	A-7F
R0402L	A-7F
R0403L	A-7F
R0405	A-6E
R0408	A-6E
R0410	A-6E
R0412	B-5E
R0415	B-6F
R0417L	B-8F
R0418L	B-8F
R0419L	B-8G
R0428	A-8F
R0429L	B-8F
R0436L	A-7F
R0445	A-7E
R0447	B-6E
R0473	B-10E
R0474	B-10E
R0479	B-9E
R0480	B-10E
R0481	B-10E
R0482	B-9E
R0497L	A-1G
R0497R	A-1G
R0501	B-3C
R0502	B-3C
R0504	A-2D
R0505	B-2C
R0506	A-2D
R0507	B-2C
R0508	B-2C
R0510	B-2C
R0511	B-2D
R0512	B-2D
R0513	B-2D
R0514	B-2D
R0516	B-2D
R0517	B-2D
R0518	B-3D
R0519	B-3D
R0522	B-3D
R0525	B-3C
R0529	B-3E
R0530	B-3F
R0531	B-3F
R0532	B-3E
R0533	B-3E
R0534	B-1B
R0538	A-3E
R0539	A-3E
R0540	A-3E
R0541	A-3D
R0544	B-3D
R0545	B-3D
R0546	B-1B
R0549	A-2D
R0550	A-2D
R0551	B-2D
R0552	B-2D
R0555	B-3D
R0556	B-3D
R0558	B-3D
R0561	B-1E
R0562	B-2E
R0566	B-1E
R0567	B-2E
R0583	B-6D
R0585	B-4E
R0601	B-3B
R0602	B-3B
R0603	B-3B
R0606	B-3B
R0607	A-3B
R0608	B-3C
R0609	A-4C
R0610	B-3B
R0611	B-3C
R0612	B-3C
R0613	B-3B
R0614	B-3C
R0616	B-3C
R0619	B-3B
R0620	B-3C
R0621	B-3C
R0622	B-3B
R0623	B-2C
R0624	B-2B
R0628	B-2B
R0640	B-9E
R0641	B-9F
R0642	B-9F
R0643	A-9E
R0644	A-9E
R0662	A-1B
R0663	A-1B
R0671	A-6A
R0672	A-6A
R0681	A-5F
R0682	A-5F
R0691	B-2B
R0692	B-2B
R0693	B-1B
R0694	B-2B
R0695	B-2B
R0696	B-1B
R0701	B-3A
R0702	A-9F
R0703	B-4E
R0704	B-2A
R0705	B-4E
R0706	B-1C
R0707	B-1C
R0708	B-1C
R0714	B-4E
R0718	A-3A
R0721	B-1E
R0722	B-1E
R0723	B-1D
R0724	B-1D
R0725	B-1D
R0728	B-5B
R0729	B-5B
R0733	A-2A
R0739	B-2B
R0740	B-2B
R0741	A-3A
R0743	B-3A
R0744	A-3A
R0746	B-3B
R0752	B-2B
R0753	A-4E
R0754	B-9F
R0755	B-9F
R0901	A-2C
R0903	A-2C
R0904	A-2C
R0905	A-2C
R0906	A-2C
R0907	A-2C
R0908	A-1D
R0909	B-1D
R0912	A-1D
R0913	A-1D
R0914	A-2A
R0915	A-2A
R0916	A-2A
R0917	B-2A
R0918	B-2A
R0919	B-2A
R0920	A-2A
R0921	A-2A
R0922	A-2A
R0923	A-2A
R0924	A-3A
R0925	A-3A
R0926	A-3A
R0927	B-2A
R0928	B-2A
R0929	B-2A
R0930	B-2A
R0931	B-2A
R0932	B-2A
R0933	B-2A
R0934	B-3A
R0935	B-2A
R0936	B-3A
R0938	B-2A
R0941	A-3A
R0942	A-3B
R0943	A-3B
R0944	B-4D
R0945	A-3B
R0947	B-3B
R0948	B-1C
R0949	B-1C
R0950	B-2B
R0951	B-3B
R0952	B-2B
R0953	B-2B
R0954	A-4B
R0955	B-3B
R0957	B-4B
R0958	B-3B
R0961	B-2A
R0962	B-2A
R0963	B-4B
R0964	B-2B
R0966	B-2B
R0969	B-3B
R0970	B-2B
R0971	B-4D
R0972	B-3B
R0974	B-2B
R0975	B-4D
R0976	A-1D
R0977	A-1D
R0978	B-2B
R0979	B-2B
R0980	B-2C
R0981	B-2C
R0982	B-2C
R0983	B-2C
R0984	A-2B
R0985	A-2B
R0986	B-5C
R0987	B-5B
R0991	B-5B
R0992	B-7E
R0994	A-3A
R0995	A-3A
R0996	B-4C
R0997	B-3B
R0998	B-3B
R0999	B-5D
R1101	B-9B
R1112	A-10B
R1113	A-10A
R1114	A-10B
R1115	B-9B
R1116	B-9B
R1117	B-9B
R1118	B-10B
R1119	B-10B
R1120	B-10B
R1121	A-11B
R1122	A-11C
R1123	A-11C
R1124	A-9C
R1126	B-10C
R1128	B-10C
R1129	B-10C
R1130	B-11C
R1131	A-10C
R1132	A-9C
R1133	A-9D
R1136	A-8C
R1137	B-11C
R1142	B-9D
R1143	B-9C
R1145	A-9C
R1146	A-9C
R1147	A-9C
R1148	B-9C
R1149	B-9D
R1150	B-9D
R1151	A-10D
R1152	A-10D
R1155	B-10D
R1156	B-10D
R1157	B-10C
R1158	B-10C
R1159	B-2B
R1160	B-2B
R1161	B-2B
R1162	B-2B
R1163	B-2B

VCA [MAIN] (TYPE 330, 535, 635) 3/3

Symbol No	Parts Location
R1169	A-10D
R1170	A-10D
R1171	A-10D
R1172	A-10D
R1175	A-9C
R1201	B-10E
R1202	A-9E
R1203	A-9E
R1204	A-10E
R1205	A-9E
R1206	A-10E
R1207	A-9D
R1208	B-9D
R1209	B-9D
R1210	B-9E
R1211	A-9D
R1212	A-9D
R1213	A-10D
R1214	A-9D
R1215	A-9D
R1216	A-10D
R1218	A-10D
R1220	A-10D
R1221	A-10E
R1222	A-10E
R1223	B-10E
R1225	A-10E
R1226	A-10E
R1303	B-10D
R1308	B-9C
R1309	B-10C
R1310	B-10C
R1311	B-10C
R1312	A-10A
R1313	A-10A
R1314	A-11B
R1315	A-11B
RT	
RT0103	B-7A
RT0203	B-6C
RT0204	B-5B
RT0205	B-5B
RT0206	B-5C
RT0207	B-5C
RT0209	B-6C
RT0210	B-4C
RT0211	B-5D
RT0212	B-5C
RT0215	B-6C
RT0216	B-5C
RT0302	B-7D
SW	
SW0902	B-1D
SW0903	B-1D
SW0904	B-1C
SW0905	B-1D
SW0906	B-3A

Symbol No	Parts Location
T	
T0551	A-2D
TL	
TL1130	A-9D
TL1133	B-2B
TL1135	B-11C
TL1203	B-11A
TL1301	A-11C
TL1302	B-10B
TL1303	A-11C
TL1304	B-10B
TL1305	B-11B
TL1306	B-11A
TL1307	B-11A
TL1308	B-10B
TL1309	B-10C
TL1310	A-10A
TL1311	B-10B
TL1312	B-11B
TL1315	A-11B
TL1325	A-11B
TP	
TP0101	B-7C
TP0103	B-8B
TP0201	B-7B
TP0203	B-7B
TP0204	B-6B
TP0205	B-6C
TP0206	B-6C
TP0207	B-4C
TP0301	B-6D
TP0302	B-7E
X	
X0201	A-7B
X0901	A-3B
X0902	A-2B
X1101	A-11C

VCA [MAIN] (TYPE 630, 835) 1/3

Symbol No	Parts Location
BL	
BL0394	A-1G
BL0395	A-1G
BL0397	A-2F
BL0399	A-2F
BL0401	A-10F
BL0402	B-10F
C	
C0101	A-8D
C0102	A-7E
C0103	B-8E
C0104	B-8E
C0105	A-8D
C0106	A-8D
C0108	B-8D
C0109	B-8D
C0110	B-8D
C0111	A-8D
C0112	B-8D
C0113	B-8D
C0114	A-8D
C0115	A-8D
C0116	B-7E
C0117	B-8C
C0118	A-7E
C0119	A-8E
C0120	A-7E
C0121	A-8E
C0122	A-6C
C0130	B-8A
C0131	A-8C
C0132	B-7C
C0133	B-7A
C0134	B-7A
C0136	B-7A
C0137	B-7B
C0140	B-8B
C0141	A-8B
C0142	A-8B
C0143	B-8C
C0144	B-8C
C0145	B-7B
C0146	A-8A
C0147	A-8A
C0148	B-7B
C0149	A-8B
C0150	A-8B
C0151	A-8C
C0153	B-7C
C0154	B-7C
C0155	B-7C
C0156	A-7D
C0159	A-8B
C0161	B-8C
C0162	B-8D
C0164	B-7D
C0165	B-8C

Symbol No	Parts Location
C0168	B-5C
C0169	B-6D
C0170	B-5D
C0171	B-5D
C0172	A-5D
C0173	A-5D
C0174	B-5C
C0175	B-5B
C0176	B-5B
C0177	A-5C
C0178	A-5C
C0179	B-5D
C0180	A-4D
C0181	A-5D
C0182	A-4C
C0183	A-5D
C0184	A-4D
C0185	A-4C
C0187	A-5C
C0188	A-5D
C0189	A-5D
C0190	A-5C
C0191	A-5C
C0195	A-5D
C0201	A-5C
C0202	A-5C
C0203	A-5C
C0204	B-5C
C0205	B-6B
C0206	B-5C
C0207	A-6C
C0208	A-6C
C0209	A-6C
C0210	A-6C
C0213	B-6C
C0214	B-6C
C0215	B-6C
C0216	A-7C
C0217	A-6C
C0218	B-7C
C0219	B-7B
C0221	B-7C
C0222	B-7C
C0223	A-6C
C0224	A-7C
C0225	A-6C
C0227	A-6C
C0228	A-6B
C0229	A-6C
C0230	A-7B
C0231	A-8C
C0232	A-7B
C0235	A-7B
C0237	B-7B
C0238	A-6A
C0240	A-7B
C0242	A-6A

Symbol No	Parts Location
C0243	A-6B
C0244	A-6A
C0245	A-6B
C0246	A-6A
C0247	A-6B
C0249	B-6B
C0250	A-6A
C0251	A-6A
C0252	A-6B
C0253	B-5B
C0254	A-6A
C0255	B-6B
C0256	B-6B
C0257	A-4C
C0258	B-4C
C0259	B-6B
C0260	B-6B
C0261	A-6B
C0262	A-6B
C0263	B-5B
C0264	A-5C
C0265	A-5C
C0266	A-6B
C0267	A-6B
C0270	A-4B
C0271	A-4B
C0272	B-3B
C0301	A-6D
C0302	A-6D
C0303	A-6D
C0304	B-6D
C0305	A-6D
C0306	A-7D
C0307	A-7D
C0308	A-6D
C0310	B-7D
C0312	B-6D
C0313	A-6E
C0314	A-6E
C0315	B-6D
C0316	A-6D
C0350	B-4D
C0351	A-4D
C0352	A-4E
C0353	A-4F
C0354	B-4D
C0355	B-4D
C0356	B-4E
C0357	A-4E
C0358	A-4E
C0359	B-5D
C0360	B-5E
C0362	B-5E
C0363	B-5E
C0364	A-5D
C0365	B-5D
C0367	A-5B

Symbol No.	Parts Location
C0368	B-5E
C0369	B-5D
C0391	A-2F
C0392	A-1G
C0395	B-5E
C0401L	A-7E
C0401R	A-6E
C0402L	A-7E
C0402R	A-6E
C0403L	A-7F
C0403R	A-6E
C0404L	A-7F
C0404R	A-5E
C0405L	A-7F
C0405R	A-5E
C0406L	A-7E
C0406R	A-5E
C0407L	A-7F
C0407R	A-5E
C0408L	A-7F
C0408R	A-5E
C0409L	A-7F
C0409R	A-5F
C0410L	A-7F
C0410R	A-5F
C0411L	A-7F
C0411R	A-5F
C0412L	A-7F
C0412R	A-5F
C0413	A-7F
C0415L	A-7F
C0415R	A-6F
C0416	A-7G
C0417L	A-6F
C0417R	A-6F
C0418L	A-6F
C0418R	A-6G
C0419L	A-6F
C0419R	A-6F
C0420	A-6G
C0421	A-6F
C0422	A-6G
C0423	B-6E
C0424L	A-8F
C0424R	B-8F
C0425	A-10F
C0426	A-6E
C0428	A-7E
C0430L	B-8G
C0430R	B-8F
C0431L	B-8F
C0431R	B-8F
C0432	A-8F
C0439	A-8G
C0441L	A-7E
C0441R	A-6E
C0443	B-6E

Symbol No.	Parts Location
C0445	A-6G
C0458	A-8G
C0459	A-8G
C0460	A-8G
C0462L	A-6E
C0462R	A-6E
C0465	A-10F
C0466	A-10E
C0467	B-10E
C0473	A-7E
C0474	A-8E
C0475L	B-8F
C0475R	B-8F
C0476L	A-7F
C0476R	A-8F
C0477	B-10E
C0483	A-9E
C0484L	A-1G
C0484R	A-1G
C0501	B-3C
C0502	B-3C
C0503	B-3C
C0504	B-3C
C0505	B-2C
C0507	B-2C
C0508	B-2C
C0509	B-2C
C0510	B-2D
C0511	B-2D
C0513	B-2D
C0514	B-2D
C0516	B-2D
C0517	B-2D
C0518	B-3D
C0519	B-3D
C0520	B-3D
C0521	B-3D
C0522	B-3D
C0523	B-3D
C0524	B-3C
C0525	B-3C
C0527	B-2E
C0528	B-2F
C0529	B-3E
C0531	A-3C
C0535	A-3E
C0537	A-3C
C0538	A-2C
C0539	A-3C
C0540	B-2D
C0541	A-3D
C0542	A-3D
C0543	B-4D
C0544	B-3D
C0545	B-3E
C0546	B-3D
C0547	A-4D

Symbol No.	Parts Location
C0548	A-4D
C0550	B-2E
C0551	B-2E
C0552	B-2E
C0554	B-2E
C0555	A-3F
C0556	A-3F
C0558	A-3F
C0559	A-3C
C0560	A-3C
C0601	B-3B
C0602	A-3B
C0603	B-3B
C0604	B-3B
C0605	A-3B
C0606	B-3C
C0607	B-3C
C0608	B-3C
C0609	B-3C
C0610	A-3C
C0611	B-3C
C0612	A-3C
C0613	A-2C
C0614	A-2C
C0615	B-3C
C0616	A-2C
C0617	B-2B
C0618	A-2B
C0619	A-3B
C0622	B-2B
C0635	B-9F
C0636	B-9F
C0637	B-9F
C0638	B-9F
C0641	A-9F
C0642	A-8F
C0643	A-8F
C0645	A-8E
C0647	A-9E
C0648	A-9E
C0649	B-9E
C0650	B-9E
C0651	B-9E
C0652	B-9F
C0671	A-7A
C0672	A-7A
C0673	A-1A
C0691	B-2B
C0692	B-2B
C0693	B-1B
C0694	B-2B
C0695	B-2B
C0696	B-1B
C0902	A-1C
C0904	A-2C
C0905	A-1C
C0906	A-2C

Symbol No.	Parts Location
C0907	A-2C
C0908	A-2C
C0909	A-2C
C0910	B-2A
C0911	A-3B
C0912	A-3A
C0913	A-2C
C0914	B-3B
C0915	B-3B
C0916	B-3B
C0917	B-3B
C0918	A-2B
C0919	A-2B
C0923	A-4D
C0924	B-4C
C0925	B-4C
C0928	A-2B
C0929	A-2B
C0930	B-2A
C0932	A-4B
C0939	A-9G
C0942	A-1B
C0943	A-4F
C0944	A-4E
C0999	A-10F
C1101	A-9B
C1102	A-9A
C1103	B-8B
C1104	B-8B
C1105	B-9B
C1106	B-9B
C1108	B-9B
C1109	B-9B
C1110	B-8A
C1111	B-8B
C1112	A-8B
C1113	A-10B
C1114	A-10B
C1115	B-10B
C1116	B-10B
C1119	A-11C
C1120	A-11C
C1121	A-11C
C1122	A-11C
C1123	A-10C
C1125	B-10C
C1126	B-10C
C1127	B-10C
C1128	A-10C
C1129	A-10B
C1131	B-11C
C1132	A-10C
C1134	A-9B
C1135	A-9C
C1136	A-10B
C1139	B-10C
C1141	B-9B

Symbol No	Parts Location
C1142	B-9C
C1143	A-9D
C1144	B-10D
C1145	B-10D
C1146	B-10D
C1147	B-10D
C1148	A-10D
C1149	A-10D
C1150	A-9B
C1151	A-9B
C1152	B-9C
C1155	A-10B
C1156	B-9E
C1157	A-8C
C1158	B-8C
C1161	A-9C
C1168	A-9A
C1169	B-9C
C1201	B-10E
C1202	B-9E
C1203	A-10E
C1204	B-9E
C1205	A-9E
C1206	A-10E
C1207	A-9E
C1208	A-9D
C1209	A-9D
C1210	A-10D
C1211	A-10D
C1212	B-10D
C1213	A-10D
C1301	A-11A
C1302	A-11B
C1303	B-11B
C1304	B-11B
C1305	B-10D
C1311	B-11B
C1312	A-11B
C1313	A-8C
C1314	A-8A
CP	
CP0202	A-7C
CP0203	A-7B
CP0204	A-5C
CP0205	A-4C
CP0206	A-4C
CP1101	A-10C
D	
D0101	B-6E
D0102	B-8C
D0201	A-6A
D0301	A-6D
D0302	B-6D
D0303	A-6D
D0305	B-5E
D0352	B-5D
D0394	A-3F

Symbol No	Parts Location
D0401	A-5F
D0403	A-5F
D0551	B-3E
D0552	A-3D
D0553	A-3D
D0601	B-2A
D0901	B-2A
D0902	B-6E
D1101	A-9D
D1102	B-9C
D1103	A-10D
D1104	A-10F
D1105	A-9D
D1201	A-10E
D1301	B-10D
F	
F0551	B-2F
F0552	B-2E
F0553	B-2F
IC	
IC0101	B-8E
IC0102	B-8B
IC0201	B-7B
IC0202	A-5D
IC0203	B-5D
IC0204	B-4D
IC0301	A-7D
IC0401	A-6F
IC0402	B-10F
IC0404	B-8F
IC0405	A-8F
IC0551	B-3D
IC0601	A-3C
IC0631	A-9F
IC0671	A-7A
IC0901	A-2B
IC0902	A-2C
IC0904	B-4C
IC0907	A-9F
IC1101	B-9B
IC1102	A-10B
IC1103	A-9B
IC1104	B-9C
IC1105	B-9B
IC1201	B-9E
IC1301	B-11B
JK	
JK0200	B-1F
L	
L0101	A-7D
L0102	A-7E
L0103	A-8E
L0104	B-7C
L0105	B-8A
L0107	A-8B
L0108	A-8B
L0109	B-8C

VCA [MAIN] (TYPE 630, 835) 2/3

Symbol No	Parts Location
L0110	A-8B
L0111	A-8B
L0112	B-8D
L0170	A-5E
L0171	A-5E
L0172	B-5C
L0201	A-5C
L0202	A-7C
L0203	A-7B
L0204	B-5B
L0205	A-6B
L0206	A-3C
L0207	B-4B
L0301	A-6E
L0350	A-5E
L0401	B-7E
L0402	B-10E
L0551	A-3F
L0552	A-3F
L0554	A-3E
L0556	A-3E
L0559	A-3D
L0560	A-3D
L0561	A-3E
L0563	A-2F
L0564	A-2E
L0565	A-2E
L0566	B-3E
L0601	A-3C
L0902	B-4C
L0903	A-4B
L0904	B-1D
L0906	A-9G
L0908	A-2B
L0909	A-4E
L1101	A-9A
L1102	A-9B
L1103	B-10C
L1104	A-10C
L1105	A-10D
L1106	A-9D
L1107	A-10A
L1109	A-9C
L1301	A-10A
PG	
PG0101	A-8D
PG0401R	B-8F
PG0402	B-10F
PG0551	B-3F
PG0601	B-5F
PG0602	A-1B
PG0603	A-9F
PG0604	A-7A
PG0901	A-1E
PG0902	B-7A
PG0903	B-6A
PG0904	B-4F
PG0905	B-9F
PG1101	A-9C
PG1103	B-1B
PG1301	B-10B
Q	
Q0101	A-8D
Q0102	B-8D
Q0103	B-8E
Q0104	A-8D
Q0105	A-7D
Q0106	A-8D
Q0107	A-8C
Q0108	A-7E
Q0109	A-8E
Q0110	A-8E
Q0111	B-7A
Q0112	B-7A
Q0116	A-8A
Q0117	A-8B
Q0120	B-7C
Q0121	B-8C
Q0122	B-7D
Q0123	B-8C
Q0130	A-8C
Q0131	A-8C
Q0140	B-7B
Q0170	A-5E
Q0171	B-5C
Q0173	A-5D
Q0175	A-5C
Q0176	A-5C
Q0201	A-6C
Q0202	A-6C
Q0203	A-6C
Q0204	A-6C
Q0206	A-6C
Q0208	B-6C
Q0209	B-6C
Q0210	A-6B
Q0211	B-6C
Q0212	B-7C
Q0213	B-7C
Q0215	A-6C
Q0216	A-7C
Q0217	A-7B
Q0219	A-6B
Q0221	A-6B
Q0224	B-4B
Q0225	A-4B
Q0226	A-4B
Q0228	B-4B
Q0229	B-4B
Q0231	B-4C
Q0232	B-4C
Q0233	B-4C
Q0301	A-6D
Q0302	A-6E
Q0303	B-7D
Q0305	A-6D
Q0306	B-6D
Q0307	B-6D
Q0308	B-6D
Q0309	B-6D
Q0350	B-4D
Q0352	B-4E
Q0356	B-4E
Q0357	A-5E
Q0358	A-4D
Q0360	B-5E
Q0361	B-5E
Q0362	B-5E
Q0363	B-5E
Q0364	B-6E
Q0365	B-6E
Q0366	B-5D
Q0367	B-5E
Q0368	B-6D
Q0370	A-5B
Q0371	A-5C
Q0372	A-5B
Q0373	A-5B
Q0374	A-5B
Q0395	B-5E
Q0401L	B-5E
Q0401R	B-5E
Q0402	B-5E
Q0403L	B-8F
Q0403R	B-8F
Q0404	A-8F
Q0409	A-8F
Q0410	A-8G
Q0411	B-10E
Q0412	B-9E
Q0413	A-8F
Q0414	B-9E
Q0415	B-6F
Q0551	B-3F
Q0552	B-3E
Q0553	B-2E
Q0555	B-3E
Q0556	B-1B
Q0557	A-2D
Q0558	A-3D
Q0559	B-3D
Q0561	B-2E
Q0562	B-2E
Q0563	B-1A
Q0601	B-3C
Q0602	B-3C
Q0603	B-3C
Q0604	B-2C
Q0901	A-2C
Q0902	A-2C
Q0903	A-1D
Q0904	A-1D
Q0905	A-1D
Q0907	B-3A
Q0909	B-3A
Q0911	B-5B
Q0912	B-5B
Q1101	B-11C
Q1102	A-9C
Q1103	A-9D
Q1108	B-9D
Q1201	B-10E
Q1202	A-10E
Q1203	A-9D
R	
R0101	B-8E
R0102	B-8E
R0103	B-8D
R0104	B-8D
R0105	A-8C
R0106	B-8D
R0107	B-8D
R0108	B-8D
R0109	B-8D
R0110	B-7D
R0111	B-7E
R0112	A-8C
R0113	A-8D
R0114	A-8D
R0115	A-8D
R0116	A-8C
R0119	A-8D
R0120	A-8D
R0121	A-8E
R0122	A-8E
R0123	A-8E
R0124	A-8E
R0125	A-8E
R0126	B-8C
R0127	A-8D
R0128	A-8D
R0129	A-7D
R0130	A-7D
R0132	A-8C
R0137	B-7C
R0138	B-7B
R0141	B-7B
R0142	B-7B
R0143	B-7A
R0144	B-7A
R0145	B-7A
R0146	B-7A
R0147	B-8B
R0148	B-7A
R0149	B-8A
R0150	B-8C
R0151	B-8C
R0152	B-8B
R0153	B-7C
R0156	A-8C
R0157	B-7C
R0158	B-7C
R0159	B-8D
R0160	B-8C
R0161	B-8C
R0162	B-7C
R0163	B-7B
R0164	B-7B
R0165	A-8C
R0167	B-7D
R0168	B-6C
R0170	B-5C
R0171	B-5C
R0172	B-5C
R0173	B-5C
R0174	B-5B
R0175	B-5C
R0176	A-4C
R0179	A-5D
R0180	A-4D
R0181	A-4D
R0182	A-4D
R0183	B-5C
R0184	A-5D
R0185	A-6D
R0186	A-5D
R0187	A-5D
R0188	B-5D
R0190	A-5C
R0191	A-5C
R0192	A-5C
R0193	A-5C
R0194	B-4C
R0196	A-5C
R0198	A-5E
R0199	A-5E
R0201	A-6C
R0202	A-6C
R0203	B-6C
R0205	B-6C
R0207	A-5C
R0208	B-5B
R0209	B-6C
R0212	A-6C
R0213	A-6B
R0215	A-6B
R0216	A-6C
R0217	A-7C
R0218	A-7B
R0219	A-7B
R0222	A-7B
R0223	A-7B
R0224	A-7B
R0228	A-7B
R0230	B-7C
R0231	B-7C
R0239	B-6B
R0240	B-6B
R0241	B-6B
R0243	A-6B
R0244	B-5B
R0245	B-3C
R0246	B-5B
R0247	A-6C
R0248	A-6C
R0251	B-7C
R0252	B-7C
R0253	A-7B
R0254	A-6B
R0255	B-4B
R0257	B-4B
R0258	B-4B
R0259	B-4B
R0260	B-4C
R0261	A-4B
R0265	A-6C
R0267	A-5B
R0268	A-5B
R0270	A-6B
R0271	B-4B
R0272	B-4C
R0274	A-6C
R0275	A-6A
R0276	A-6A
R0292	A-6C
R0293	A-6C
R0294	A-6C
R0295	A-6C
R0296	A-6C
R0298	A-6C
R0299	B-6C
R0302	A-6D
R0303	B-6D
R0305	A-6D
R0310	A-7D
R0311	B-7E
R0313	B-6D
R0314	B-6D
R0316	A-6E
R0317	A-6E
R0318	B-6D
R0319	B-6D
R0324	A-6D
R0325	A-6D
R0326	A-6D
R0327	A-6D
R0328	B-6D
R0330	B-6D
R0333	B-6D
R0334	B-6D
R0335	B-6D
R0336	A-5C
R0337	B-4E
R0339	A-6D
R0340	A-7D
R0341	A-5B
R0342	A-5C
R0343	A-5B
R0344	B-4C
R0346	B-5E
R0347	B-5E
R0350	B-4D
R0351	B-4D
R0354	B-5E
R0355	B-4E
R0356	B-4E
R0357	B-4D
R0359	B-4D
R0364	B-5D
R0366	B-5E
R0371	B-5E
R0373	B-5D
R0374	B-4E
R0382	B-5E
R0383	A-4D
R0384	B-5E
R0390	A-2G
R0391	A-2F
R0397	A-2F
R0399	B-4E
R0401L	A-7F
R0401R	A-5F
R0402L	A-7F
R0402R	A-6F
R0403L	A-7F
R0403R	A-6F
R0405	A-6E
R0408	A-6E
R0410	A-6E
R0412	B-5E
R0413L	A-7F
R0413R	A-5F
R0415	B-6F
R0417L	B-8F
R0417R	B-8F
R0418L	B-8F
R0418R	B-8F
R0419L	B-8G
R0419R	B-8F
R0420L	A-7F
R0420R	A-8F
R0421L	A-8F
R0421R	B-9F
R0428	A-8F
R0429L	B-8F
R0429R	B-8F
R0435	A-7G
R0436L	A-7F
R0436R	A-6E
R0445	A-7E
R0447	B-6E
R0464	A-8G
R0466	A-8G
R0467	A-8G
R0468	A-8G
R0469	A-8G
R0470	A-8G
R0473	B-10E
R0474	B-10E
R0477	A-8G
R0479	B-9E
R0480	B-10E
R0481	B-10E
R0482	B-9E
R0484	A-8E
R0485	A-8E
R0486	A-8E
R0487	A-8E
R0488L	B-8E
R0488R	B-8E
R0489L	A-8E
R0489R	A-8E
R0490L	B-8F
R0490R	B-8E
R0491L	B-8E
R0491R	B-8E
R0492L	A-8F
R0492R	A-7F
R0493L	A-7F
R0493R	A-8E
R0494L	A-7F
R0494R	A-8F
R0496L	A-7F
R0497L	A-1G
R0497R	A-1G
R0501	B-3C
R0502	B-3C
R0504	A-2D
R0505	B-2C
R0506	A-2D
R0507	B-2C
R0508	B-2C
R0510	B-2C
R0511	B-2D
R0512	B-2D
R0513	B-2D
R0514	B-2D
R0516	B-2D
R0517	B-2D
R0518	B-3D
R0519	B-3D
R0522	B-3D
R0525	B-3C
R0529	B-3E
R0530	B-3F
R0531	B-3F
R0532	B-3E
R0533	B-3E
R0534	B-1B
R0538	A-3E
R0539	A-3E
R0540	A-3E
R0541	A-3D
R0544	B-3D
R0545	B-3D
R0546	B-1B
R0549	A-2D
R0550	A-2D
R0551	B-2D
R0552	B-2D
R0555	B-3D
R0556	B-3D
R0558	B-3D
R0561	B-1E
R0562	B-2E
R0566	B-1E
R0567	B-2E
R0583	B-6D
R0585	B-4E
R0601	B-3B
R0602	B-3B
R0603	B-3B
R0606	B-3B
R0607	A-3B
R0608	B-3C
R0609	A-4C
R0610	B-3B
R0611	B-3C
R0612	B-3C
R0613	B-3B
R0614	B-3C
R0616	B-3C
R0619	B-3B
R0620	B-3C
R0621	B-3C
R0622	B-3B
R0623	B-2C
R0624	B-2B
R0628	B-2B
R0640	B-9E
R0641	B-9F
R0642	B-9F
R0643	A-9E
R0644	A-9E
R0662	A-1B
R0663	A-1B
R0671	A-6A
R0672	A-6A
R0681	A-5F
R0682	A-5F
R0691	B-2B
R0692	B-2B
R0693	B-1B

VCA [MAIN] (TYPE 630, 835) 3/3

Symbol No.	Parts Location
R0694	B-2B
R0695	B-2B
R0696	B-1B
R0701	B-3A
R0702	A-9F
R0703	B-4E
R0704	B-2A
R0705	B-4E
R0706	B-1C
R0707	B-1C
R0708	B-1C
R0714	B-4E
R0718	A-3A
R0721	B-1E
R0722	B-1E
R0723	B-1D
R0724	B-1D
R0725	B-1D
R0728	B-5B
R0729	B-5B
R0733	A-2A
R0739	B-2B
R0740	B-2B
R0741	A-3A
R0743	B-3A
R0744	A-3A
R0746	B-3B
R0751	B-2B
R0753	A-4E
R0754	B-9F
R0755	B-9F
R0901	A-2C
R0903	A-2C
R0904	A-2C
R0905	A-2C
R0906	A-2C
R0907	A-2C
R0908	A-1D
R0909	B-1D
R0912	A-1D
R0913	A-1D
R0914	A-2A
R0915	A-2A
R0916	A-2A
R0917	B-2A
R0918	B-2A
R0919	B-2A
R0920	A-2A
R0921	A-2A
R0922	A-2A
R0923	A-2A
R0924	A-3A
R0925	A-3A
R0926	A-3A
R0927	B-2A
R0928	B-2A
R0929	B-2A
R0930	B-2A
R0931	B-2A
R0932	B-2A
R0933	B-2A
R0934	B-3A
R0935	B-2A
R0936	B-3A
R0938	B-2A
R0941	A-3A
R0942	A-3B
R0943	A-3B
R0944	B-4D
R0945	A-3B
R0947	B-3B
R0948	B-1C
R0949	B-1C
R0950	B-2B
R0951	B-3B
R0952	B-2B
R0953	B-2B
R0954	A-4B
R0955	B-3B
R0957	B-4B
R0958	B-3B
R0961	B-2A
R0962	B-2A
R0963	B-4B
R0964	B-2B
R0966	B-2B
R0969	B-3B
R0970	B-2B
R0971	B-4D
R0972	B-3B
R0974	B-2B
R0975	B-4D
R0976	A-1D
R0977	A-1D
R0978	B-2B
R0979	B-2B
R0980	B-2C
R0981	B-2C
R0982	B-2C
R0983	B-2C
R0984	A-2B
R0985	A-2B
R0986	B-5C
R0987	B-5B
R0991	B-5B
R0992	B-7E
R0994	A-3A
R0995	A-3A
R0996	B-4C
R0997	B-3B
R0998	B-3B
R0999	B-5D
R1101	B-9B
R1112	A-10B
R1113	A-10A
R1114	A-10B
R1115	B-9B
R1116	B-9B
R1117	B-9B
R1118	B-10B
R1119	B-10B
R1120	B-10B
R1121	A-11B
R1122	A-11C
R1123	A-11C
R1124	A-9C
R1126	B-10C
R1128	B-10C
R1129	B-10C
R1130	B-11C
R1131	A-10C
R1132	A-9C
R1133	A-9D
R1136	A-8C
R1137	B-11C
R1142	B-9D
R1143	B-9C
R1145	A-9C
R1146	A-9C
R1147	A-9C
R1148	B-9C
R1149	B-9D
R1150	B-9D
R1155	B-10D
R1156	B-10D
R1157	B-10C
R1158	B-10C
R1159	B-2B
R1160	B-2B
R1161	B-2B
R1162	B-2B
R1163	B-2B
R1169	A-10D
R1170	A-10D
R1175	A-9C
R1201	B-10E
R1202	A-9E
R1203	A-9E
R1204	A-10E
R1205	A-9E
R1206	A-10E
R1207	A-9D
R1208	B-9D
R1209	B-9D
R1210	B-9E
R1211	A-9D
R1212	A-9D
R1213	A-10D
R1214	A-9D
R1215	A-9D
R1216	A-10D
R1218	A-10D
R1220	A-10D
R1221	A-10E
R1222	A-10E
R1223	B-10E
R1225	A-10E
R1226	A-10E
R1303	B-10D
R1308	B-9C
R1309	B-10C
R1310	B-10C
R1311	B-10C
R1312	A-10A
R1313	A-10A
R1314	A-11B
R1315	A-11B
RT	
RT0103	B-7A
RT0202	B-6C
RT0203	B-6C
RT0204	B-5B
RT0205	B-5B
RT0206	B-5C
RT0207	B-5C
RT0209	B-6C
RT0210	B-4C
RT0211	B-5D
RT0212	B-5C
RT0214	B-5C
RT0215	B-6C
RT0216	B-5C
RT0217	B-5C
RT0302	B-7D
SW	
SW0902	B-1D
SW0903	B-1D
SW0904	B-1C
SW0905	B-1D
SW0906	B-3A
T	
T0551	A-2D
TL	
TL1130	A-9D
TL1133	B-2B
TL1135	B-11C
TL1203	B-11A
TL1301	A-11C
TL1302	B-10B
TL1303	A-11C
TL1304	B-10B
TL1305	B-11B
TL1306	B-11A
TL1307	B-11A
TL1308	B-10B
TL1309	B-10C
TL1310	A-10A
TL1311	B-10B
TL1312	B-11B
TL1313	B-9B
TL1314	B-8C
TL1315	A-11B
TL1325	A-11B
TP	
TP0101	B-7C
TP0103	B-8B
TP0201	B-7B
TP0203	B-7B
TP0204	B-6B
TP0205	B-6C
TP0206	B-6C
TP0207	B-4C
TP0301	B-6D
TP0302	B-7E
X	
X0201	A-7B
X0901	A-3B
X0902	A-2B
X1101	A-11C

LCD [LCD DRIVE]

Symbol No.	Parts Location
C	
C5304	A-3A
C5305	A-4A
C5306	A-4B
C5308	A-3B
C5309	A-4B
C5310	A-4B
C5312	B-5A
C5313	B-5B
C5314	A-4A
C5315	A-5A
C5316	A-4A
C5317	A-4A
C5318	A-5A
C5319	B-5A
C5320	A-4A
C5321	A-4A
C5322	A-4A
C5323	A-4A
C5324	B-3A
C5325	A-3A
C5326	A-3A
C5327	A-4A
C5328	B-4A
C5329	A-4B
C5330	A-4B
C5331	A-4B
C5332	A-4B
C5333	A-4B
C5334	A-4B
C5335	A-4B
C5336	A-4A
C5337	A-3A
C5338	A-3A
C5340	A-4A
C5341	A-4A
C5401	A-3C
C5402	A-3D
C5403	A-3C
C5404	A-3D
C5405	A-3C
C5406	B-4D
C5407	B-3D
C5408	B-3D
C5409	B-3C
C5410	B-3C
C5411	B-3C
C5412	B-3C
C5413	B-4C
C5414	B-4C
C5415	A-3B
C5416	A-3C
C5417	A-3C
C5418	A-3C
C5419	A-4C
C5420	A-4C
C5421	A-4C
C5422	A-4C
C5501	A-3B
C5502	B-4B
C5503	B-3B
C5504	B-3A
C5505	B-3A
C5506	A-3B
C5507	B-3C
C5508	B-3C
C5509	B-3B
C5510	B-3B
C5511	B-3C
C5512	A-3B
C5513	A-2B
C5514	B-1C
C5515	A-2B
C5516	A-2B
C5517	A-2B
C5601	A-4C
C5602	A-4C
C5603	A-4D
C5604	A-4C
C5605	B-5C
C5606	A-4C
C5607	A-4C
C5608	A-4B
C5609	A-5B
C5610	B-5C
C5611	B-4C
C5612	B-4C
C5613	B-4C
C5614	B-4C
C5615	B-4C
C5616	B-5B
C5617	A-4D
C5619	A-4C
C5620	B-4B
C5621	B-5C
C5622	B-5D
D	
D5301	B-4B
D5401	A-3D
D5402	B-4C
D5403	B-3C
D5404	B-3B
D5501	A-3B
D5601	A-4C
D5602	B-4C
IC	
IC5301	A-4A
IC5401	B-3D
IC5501	B-3B
IC5502	A-3B
IC5601	A-4C
IC5602	B-4C
L	
L5301	A-5A
L5302	A-3A
L5303	A-4B
L5304	A-4B
L5401	B-3C
L5402	A-3C
L5403	A-3C
L5404	A-3B
L5501	A-3B
L5502	B-2C
L5503	B-3B
L5601	A-3C
L5602	A-4B
L5603	A-4B
L5604	B-4C
PG	
PG5501	B-2D
PG5701	B-2B
PG5702	B-4D
Q	
Q5301	A-4B
Q5302	A-4B
Q5401	A-3D
Q5402	A-3D
Q5403	A-3C
Q5404	A-3D
Q5405	B-3C
Q5406	B-3C
Q5501	A-4B
Q5502	A-4B
Q5503	B-3B
Q5504	B-4A
Q5505	B-4B
Q5506	B-4B
Q5507	B-4B
Q5508	A-4B
Q5509	A-4B
Q5510	B-3B
Q5511	B-3C
Q5512	B-3B
Q5513	B-3B
Q5514	A-4B
Q5601	A-4C
Q5602	A-4C
Q5604	A-5C
Q5605	A-4C
Q5606	A-4C
R	
R5301	A-3A
R5302	A-4B
R5303	A-4B
R5304	A-2A
R5307	B-3A
R5308	B-3A
R5309	A-4B
R5310	A-4B
R5313	B-5B
R5314	B-5B
R5315	A-4A
R5316	A-5A
R5317	A-5A
R5318	A-4A
R5319	A-4A
R5320	A-5A
R5323	B-4A
R5324	B-5A
R5325	B-4A
R5326	B-4A
R5327	B-4A
R5328	B-4A
R5329	B-4A
R5330	B-4A
R5331	A-4A
R5332	A-3A
R5333	B-3A
R5334	B-3A
R5336	A-3A
R5338	A-3A
R5339	A-3B
R5340	A-3B
R5341	B-4A
R5342	B-4A
R5343	A-3B
R5344	B-4B
R5345	B-4B
R5346	B-4B
R5347	A-4B
R5349	A-4B
R5351	B-4A
R5357	B-3A
R5401	A-3D
R5402	A-3C
R5404	B-3C
R5405	B-3C
R5406	B-3D
R5407	B-3D
R5408	B-4D
R5409	B-3C
R5410	B-3C
R5411	B-3C
R5412	B-3C
R5413	B-3C
R5414	B-3C
R5415	B-3C
R5416	B-3C
R5417	B-4C
R5420	A-3D
R5501	A-3B
R5502	B-3A
R5503	B-3B
R5504	B-3B
R5505	B-3A
R5506	B-3A
R5507	B-4A
R5508	B-3B
R5509	B-4B
R5510	B-4B
R5511	B-4B
R5512	A-3B
R5513	A-3A
R5514	A-3B
R5515	A-3B
R5518	A-3B
R5519	A-3B
R5521	A-3B
R5522	B-3B
R5523	B-3B
R5524	B-3B
R5525	B-2B
R5526	B-3B
R5527	A-4B
R5528	A-4B
R5529	A-4B
R5601	A-4C
R5602	A-4C
R5603	A-4C
R5604	A-4C
R5605	A-4C
R5606	A-4C
R5607	A-4C
R5609	A-4D
R5610	A-5C
R5611	A-5C
R5612	A-4C
R5613	B-4B
R5614	B-5B
R5615	A-4C
R5616	A-4C
R5617	B-4B
R5618	B-4B
R5619	B-4C
R5620	B-4C
R5621	B-5C
R5622	B-4C
R5623	B-4C
R5624	B-4C
R5625	B-4C
R5626	B-4C
R5627	B-4C
R5628	B-4C
R5629	B-4C
R5630	B-4C
R5631	B-4C
R5632	B-4B
R5633	B-4B
R5634	B-4B
R5635	B-4B
R5636	B-4B
R5637	B-5B
R5638	A-4D
R5639	A-4D
R5642	B-5C
R5643	B-4C
R5644	B-5C
R5645	B-5B
R5646	B-4B
R5647	A-4C
R5648	A-4C
R5649	A-5C
R5708	B-4C
R5710	B-5B
R5711	B-5B
R5712	B-5B
R5713	B-5B
RT	
RT5301	B-4A
RT5302	B-4A
RT5307	B-5A
RT5308	B-5A
RT5311	B-4A
RT5312	B-4A
RT5313	B-4A
RT5314	B-4A
RT5315	B-3A
RT5316	B-3A
RT5317	B-4B
RT5318	B-4B
RT5601	B-4B
RT5602	B-4B
RT5603	B-4B
RT5604	B-4B
RV	
RV5602	B-5B
RV5701	A-6A
RV5702	A-6B
SW	
SW5701	A-1B
T	
T5401	B-3C
T5501	A-2C
X	
X5301	A-5B
ZD	
ZD5601	B-5C
ZD5702	B-5B

SE [SENSOR/GYRO]

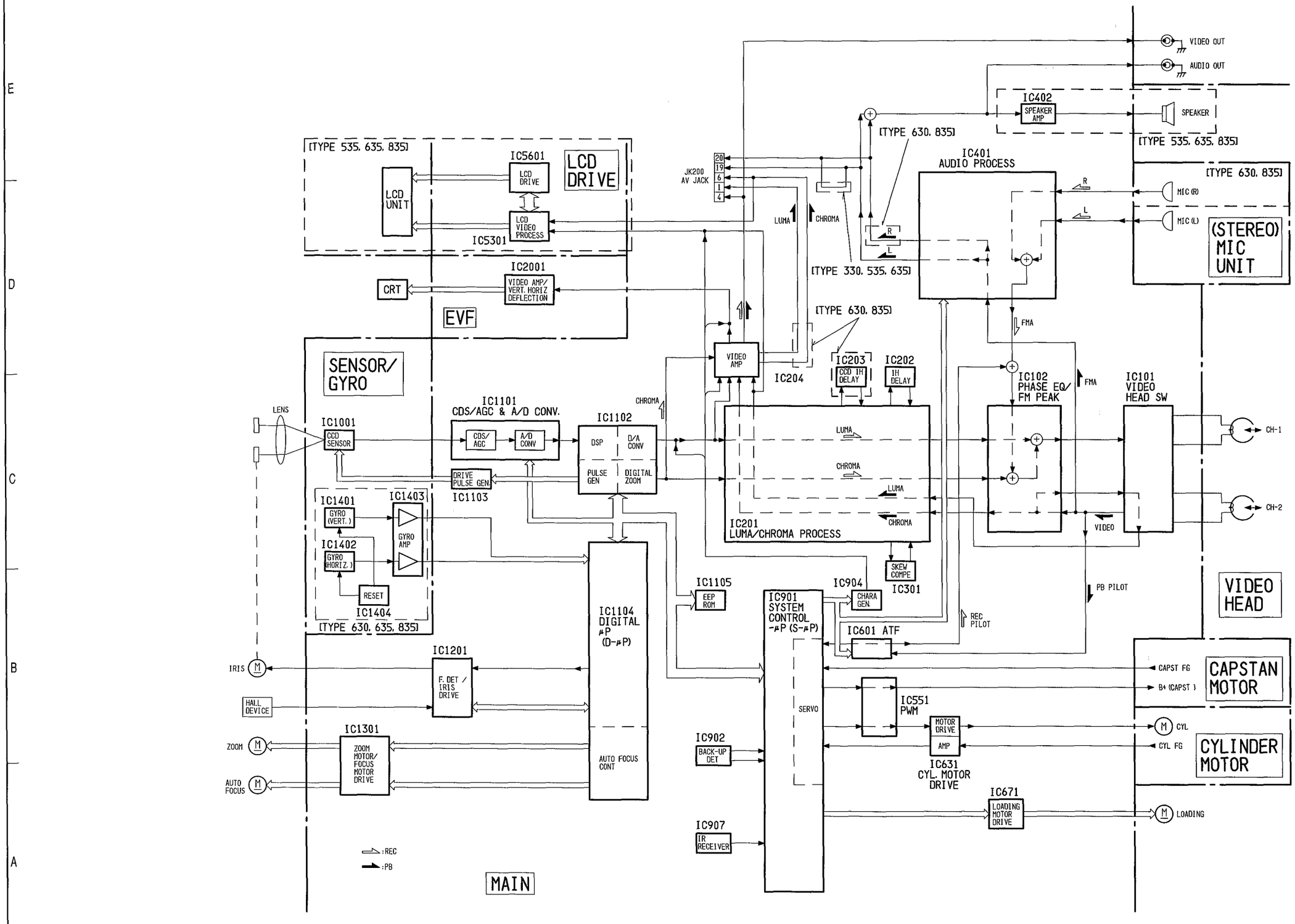
Symbol No	Parts Location
C	
C1002	A-4B
C1003	B-4B
C1004	B-4C
C1005	A-5B
C1006	B-4B
C1007	B-5B
C1008	B-4B
C1009	B-4C
C1010	B-4B
C1403	B-3A
C1404	B-2A
C1405	A-2A
C1406	A-2A
C1407	B-3A
C1408	B-2A
C1409	B-3B
C1410	B-2A
C1411	A-2A
C1412	A-1A
C1413	B-4A
C1414	B-4B
C1415	B-3A
C1417	A-4B
C1418	B-3B
D	
D1002	B-4B
IC	
IC1001	B-5A
IC1401	B-3A
IC1402	B-2A
IC1403	B-4A
IC1404	B-4B
PG	
PG1001	A-4B
Q	
Q1001	B-5A
Q1401	B-3C
R	
R1001	B-4A
R1002	B-4B
R1003	B-4C
R1006	B-4B
R1009	B-4B
R1401	B-3A
R1402	B-2A
R1403	B-3A
R1404	B-2A
R1405	B-3A
R1406	B-2A
R1407	B-4B
R1408	B-3B
R1409	B-4B
R1410	B-3B
R1411	B-4A
R1412	B-4B
R1413	B-4A
R1414	B-4B
R1416	B-3B
R1417	B-3B

EMQ [ELECTRONIC VIEWFINDER]

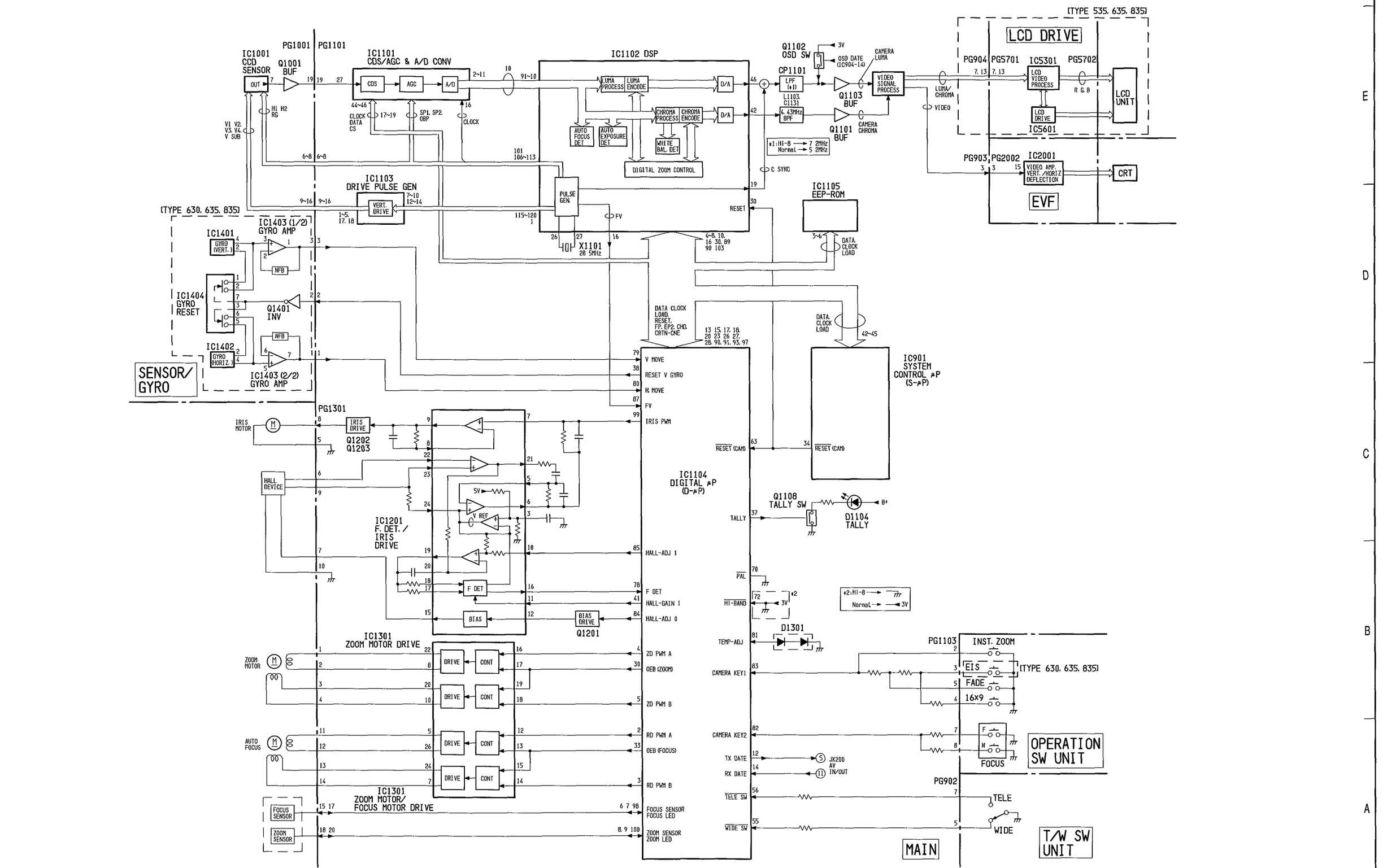
Symbol No.	Parts Location
C	
C2001	B-1B
C2002	B-2A
C2003	B-2A
C2004	A-2B
C2005	A-1A
C2006	A-2A
C2007	A-2A
C2008	B-2A
C2009	A-1A
C2011	A-2A
C2012	A-2B
C2013	A-4B
C2014	A-4B
C2015	A-3A
C2016	A-3A
C2017	B-1A
C2018	B-1A
D	
D2001	B-3A
D2002	A-1A
IC	
IC2001	A-4A
L	
L2001	B-3A
L2002	A-1B
PG	
PG2001	A-3B
PG2002	A-4A
Q	
Q2001	A-2B
Q2002	A-3A
R	
R2001	A-1B
R2002	A-2A
R2003	A-2A
R2004	A-2A
R2005	A-2A
R2006	A-1A
R2007	A-1A
R2008	A-2B
R2009	A-3B
R2011	A-2A
R2012	A-2B
R2013	A-3A
R2014	A-3A
R2015	A-4B
R2016	B-1A
R2017	A-3B
R2018	A-3A
R2019	A-3A
R2020	A-3A
R2021	B-1A
R2022	A-4A
R2024	A-2A
R2025	A-3A
R2026	B-1A
R2027	B-1A
RT	
RT2001	A-2A
RT2002	A-3A
RT2003	B-1A
T	
T2001	A-1A
TF	
TF2001	B-2A

BLOCK DIAGRAMS

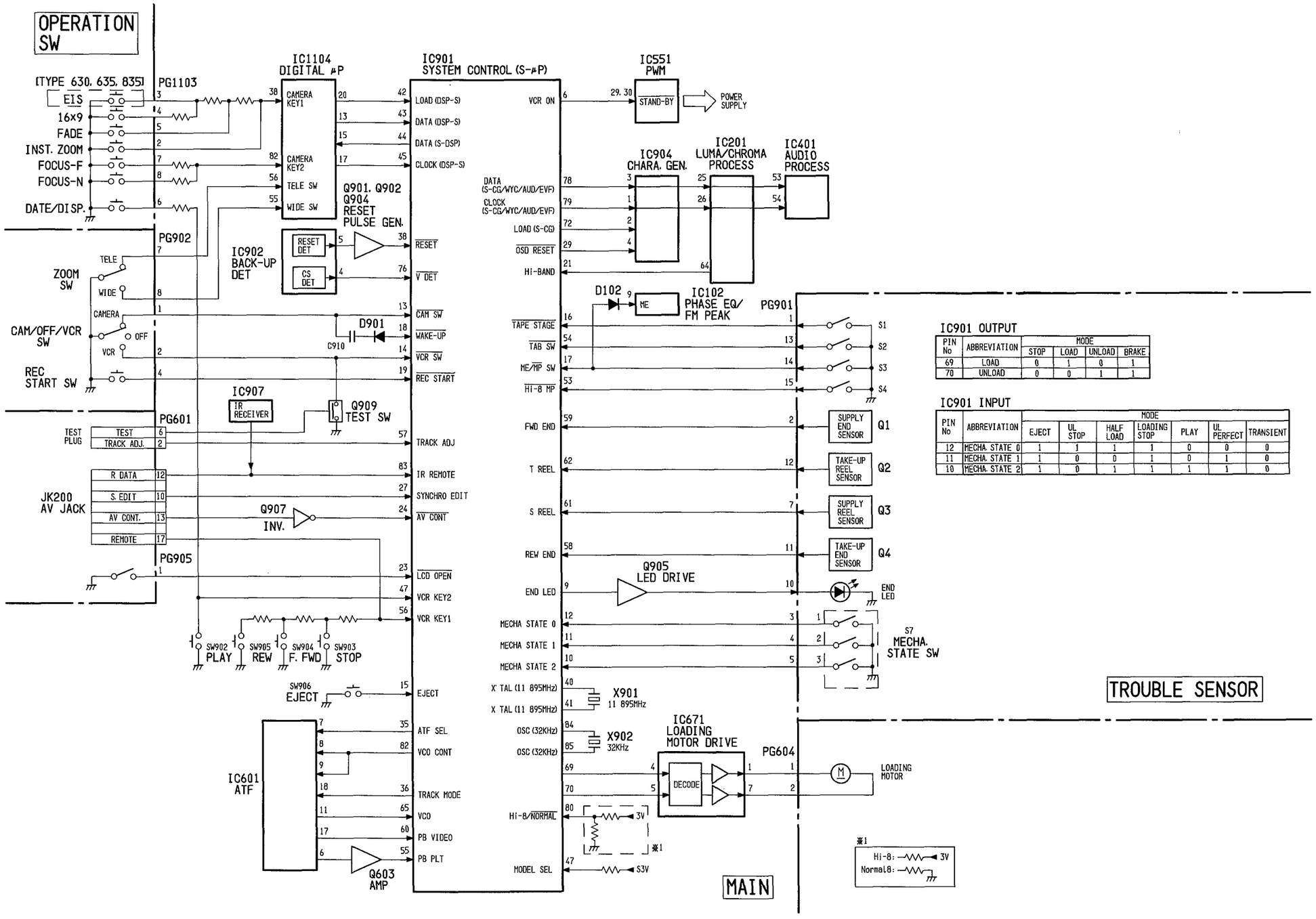
1.OVERALL BLOCK DIAGRAM



2.CAMERA BLOCK DIAGRAM



3.SYSTEM CONTROL BLOCK DIAGRAM



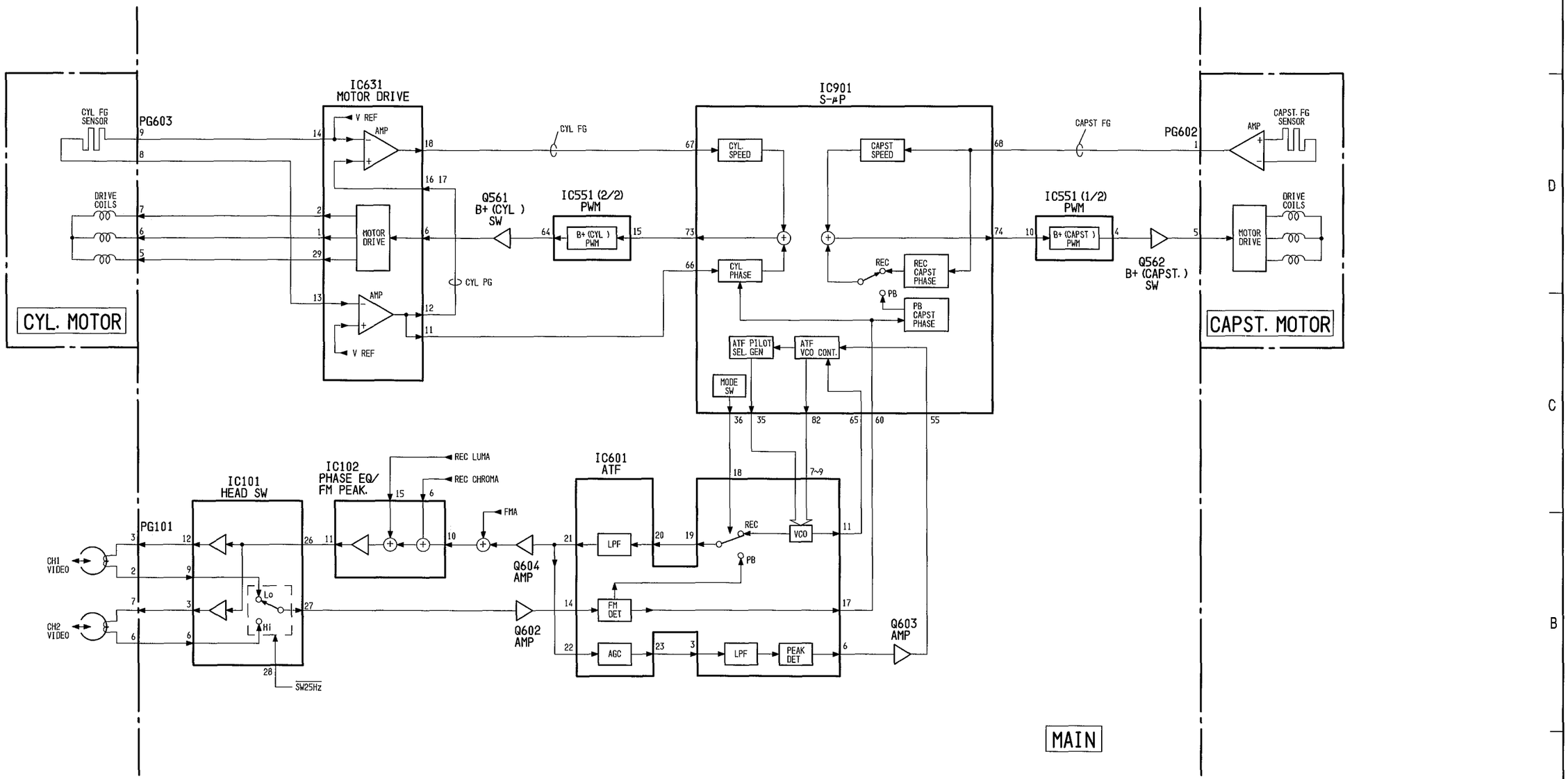
IC901 OUTPUT

PIN No	ABBREVIATION	MODE			
		STOP	LOAD	UNLOAD	BRAKE
69	LOAD	0	1	0	1
70	UNLOAD	0	0	1	1

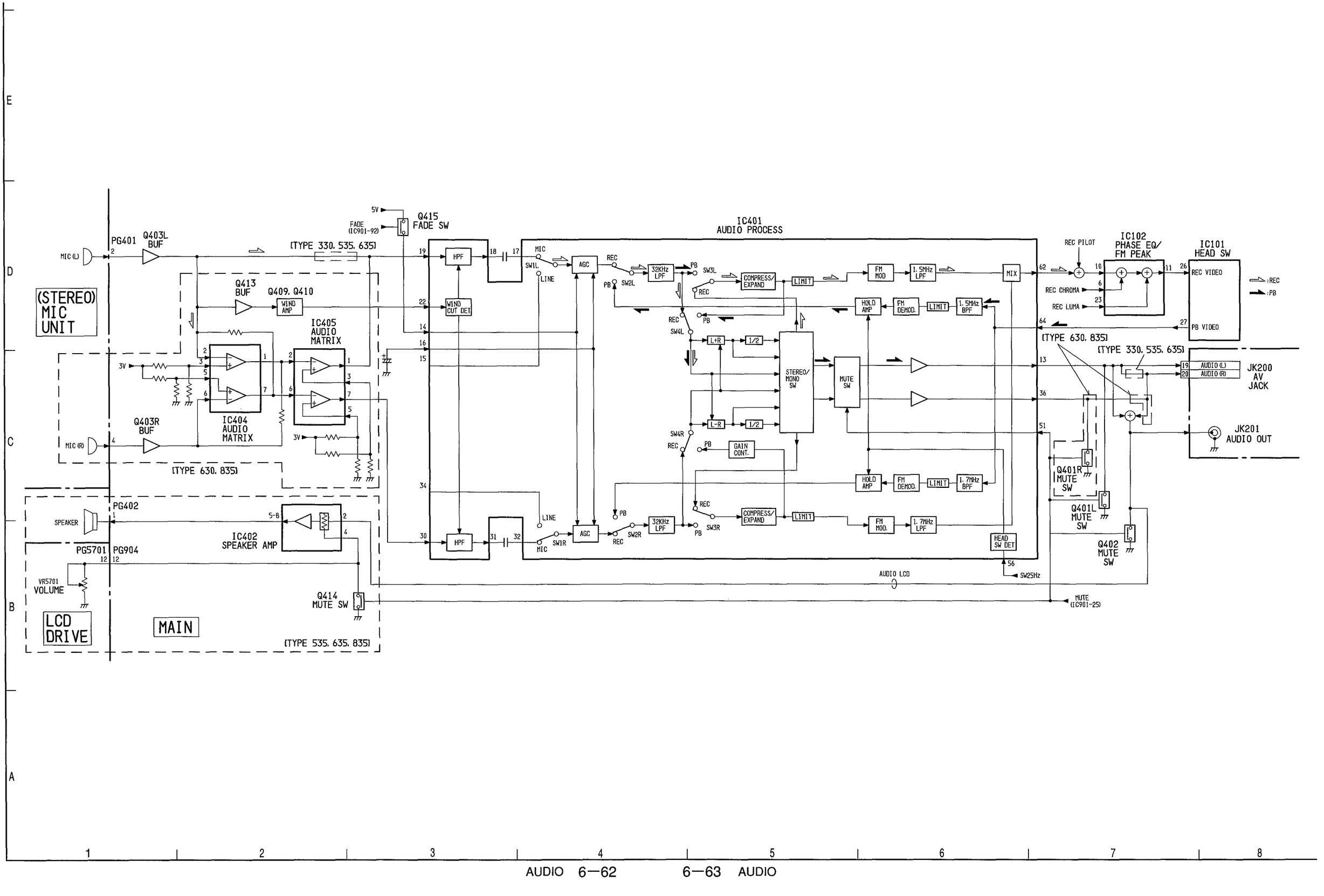
IC901 INPUT

PIN No	ABBREVIATION	MODE						
		EJECT	UL STOP	HALF LOAD	LOADING STOP	PLAY	UL PERFECT	TRANSIENT
12	MECHA. STATE 0	1	1	1	1	0	0	0
11	MECHA. STATE 1	1	0	0	1	0	1	0
10	MECHA. STATE 2	1	0	1	1	1	1	0

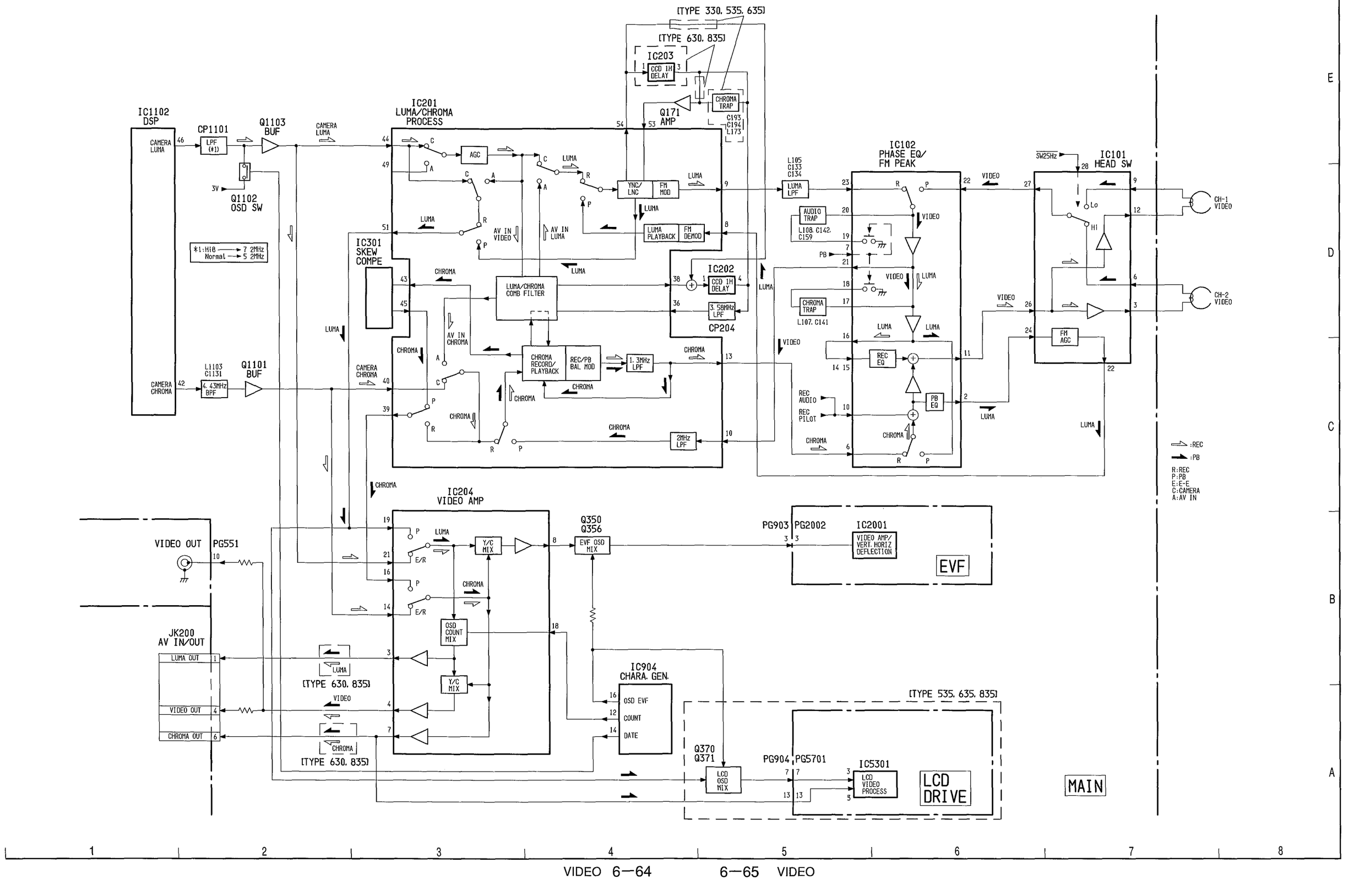
4.SERVO BLOCK DIAGRAM



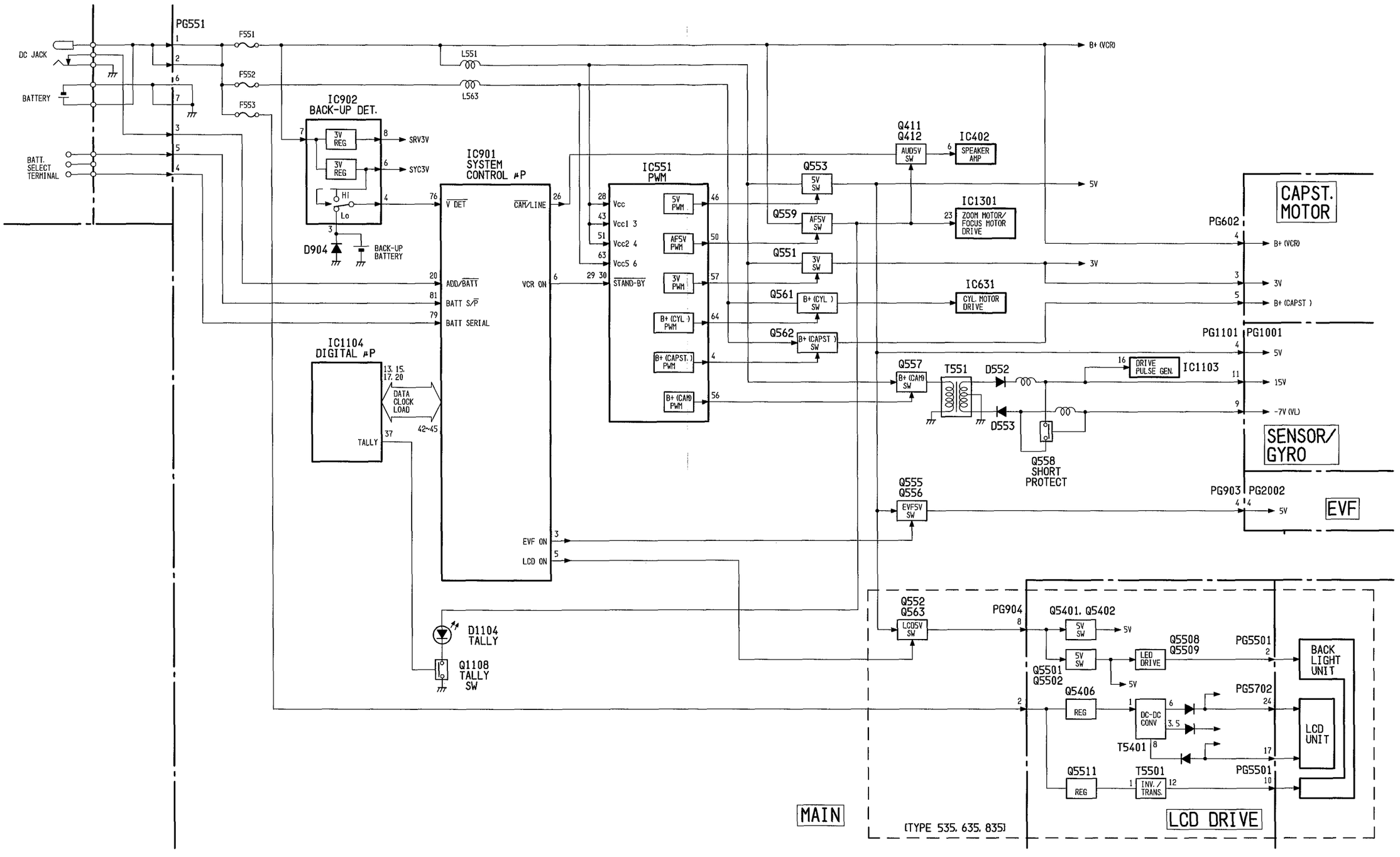
5.AUDIO BLOCK DIAGRAM



6.VIDEO BLOCK DIAGRAM



7.POWER BLOCK DIAGRAM



MICROPROCESSOR PIN FUNCTION TABLES

1. Digital Microprocessor (IC1104: D-μP)

Pin No.	I/O	Active Level	Abbreviation	Function
1	-----	------	VCC	3V power input.
2	O	PWM	RD-PWM-A	Outputs focus motor drive signal to IC1301 (FOCUS MOTOR/ZOOM MOTOR DRIVE).
3	O	PWM	RD-PWM-B	
4	O	PWM	ZD-PWM-A	Outputs zoom motor drive signal to IC1301 (FOCUS MOTOR/ZOOM MOTOR DRIVE).
5	O	PWM	ZD-PWM-B	
6	O	(Pulse)	FCS-LED1	Output pulses to drive the LEDs in the focus reset switches (FOCUS RESET SW).
7	O	(Pulse)	FCS-LED2	
8	O	(Pulse)	ZOOM LED1	Output pulses to drive the LEDs in the zoom reset switches (ZOOM RESET SW).
9	O	(Pulse)	ZOOM LED2	
10	-----	-----	RESO[Lo]	Not used. Open.
11	-----	-----	VSS	Ground.
12	O	(Pulse)	SD (232C)	Used for initial settings and adjustment. For data communications with personal computer.
14	I	(Pulse)	RD (232C)	
13	O	(Pulse)	SD	For data communications with IC1102 (DSP), IC1105 (EEP-ROM) and IC901 (S-μP).
15	I	(Pulse)	S1	
17	O	(Pulse)	CLK	
16	-----	-----	----------	Not used. Open.
18	O	(Pulse)	LD-DSP)	Activates data communications with IC1102 (DSP).
19	-----	-----	CS-MB	Not used. Open.
20	O	(Pulse)	CS-MA	Activates data communications with IC901 (S-μP).
21	-----	-----	LD-EV	Not used. Open.
22	-----	-----	VSS	Ground.
23	O	Lo	CS-EE	Activates data communications with IC1105 (EEP-ROM).
24	-----	-----	----------	Not used. Open.
25	-----	-----	----------	
26	O	(Pulse)	CS-CDS	Transfer data to IC1101 (CDS/AGC).
27	O	(Pulse)	CLK-CDS	
28	O	(Pulse)	SD-CDS	
29	-----	-----	ZD-RESET	Not used. Open.
30	O	Hi	ZDOEB	Activates data communications with IC1301 (FOCUS MOTOR/ZOOM MOTOR DRIVE).
31	-----	-----	ZDCW	Not used. Open.
32	-----	-----	RD-RESET	
33	O	(Pulse)	RDOEB	Activates data communications with IC1301 (FOCUS MOTOR/ZOOM MOTOR DRIVE).
34	-----	-----	RDCW	Not used. Open.
35	-----	-----	VCC	3V power input.
36	-----	-----	LD-VDRV	Not used. Open.
37	O	Hi	TALLY	Drives Q1108 (TALLY SW) to turn on the record LED during recording.
38	O	Hi	VGRO-RES	Drives IC1404 (GYRO RESET) via Q1401 (INV.) to reset IC1401 (V. GYRO) and IC1402 (H. GYRO).
39	-----	-----	HGRO-RES	Not used. Open.
40	-----	-----	HALL G0	
41	O	Hi	HALL G1	Control the amplification (gain of Hall device) of IC1201 (F.DET/IRIS DRIVE).
42	-----	-----	JIG-LOAD	Not used. Open.
43	-----	-----	CHECKB	
44	-----	-----	VSS	Ground.
45	----	-----	----------	Not used. Open.
46	----	-----	----------	
47	----	-----	----------	
48	----	-----	----------	
49	----	-----	----------	
50	----	-----	----------	

Pin No.	I/O	Active Level	Abbreviation	Function
51	-----	-----	----------	Not used. Open.
52	-----	-----	----------	
53	-----	-----	BRST-FLG	
54	-----	-----	T/W-FAST	
55	I	Lo	WIDE-SW	Zoom switch detection inputs.
56	I	Lo	TELE-SW	
57	-----	-----	VSS	Ground.
58	-----	-----	CLK-EV	Not used. Open.
59	-----	-----	SD-EV	
60	-----	-----	PWR-SAVE	
61	-----	-----	----------	
62	I	Lo	STBY[Lo]	No used. Connected to 3V power supply.
63	I	Lo	RESET[Lo]	Reset signal input from IC901 (S-µP).
64	I	Lo	NM1[Lo]	Not used. Connected to 3V power supply.
65	-----	-----	VSS	Ground.
66	I	(Pulse)	XIN	Clock pulse input from IC1102 (DSP).
67	-----	-----	XOUT	Not used. Open.
68	-----	-----	VCC	3V power input.
69	-----	-----	----------	Not used. Open.
70	I	Hi/Lo	PAL[Lo]	NTSC model: Not used. Connected to 3V power supply. PAL model: Used. Connected to ground.
71	I	Hi/Lo	SECAM[Lo]	Not used. Connected to 3V power supply.
72	I	Hi/Lo	Hi-BAND[Lo]	Normal 8 model: Not used. Connected to 3V power supply. Hi-8 model: Used. Connected to ground.
73	I	Lo	MD0	Not used. Ground.
74	I	Hi	MD1	Not used. Connected to 3V power supply.
75	I	Hi	MD2	
76	-----	-----	AVCC	5V power input (for analog circuits in microprocessor).
77	-----	-----	VREF	A/D reference voltage input (connected to 5V power supply).
78	-----	0V-5V	FDET	F-value detection input. Receives the F.DET voltage detected by IC1201 (F.DET/IRIS DRIVE) and compares this with the reference voltage input via pin 77 to detect the F-value.
79	I	0V-5V	V-MOVE	Receives vertical camera shake correction data from IC1401 (GYRO (VERT.)) via IC1403 (GYRO AMP).
80	I	0V-5V	H-MOVE	Receives horizontal camera shake correction data from IC1402 (GYRO (HORIZ.)) via IC1403 (GYRO AMP).
81	I	0V-5V	TEMP-ADJ	Temperature change detection input. Detects variations in the forward voltage at the connected diode to correct the back-focus.
82	I	0V-5V	CAM-KEY2	Camera switch detection input (Manual focus).
83	I	0V-5V	CAM-KEY1	Camera switch detection input (EIS, fade, cinema mode, instant zoom).
84	O	0V-5V	HAL-ADJ0	Drives bias generator in IC1201 (F.DET/IRIS DRIVE) via Q1201 (BUF) to control the bias voltage of the Hall devices.
85	O	0V-5V	HAL-ADJ.1	Controls the offset voltage of IC1201 (F.DET/IRIS DRIVE).
86	-----	-----	AVSS	Ground.
87	I	(Pulse)	FV	Receives the vertical sync pulses that detect the iris detection area, from IC1103 (DSP).
88	-----	-----	NEAR-SW	Not used. Open.
89	-----	-----	FAR-SW	Not used. Open.
90	I	(Pulse)	FP	Field discrimination pulse input.
91	I	(Pulse)	EP2	Receives pulses which discriminate the iris detection area.
92	-----	-----	VSS	Ground.
93	I	(Pulse)	CHD(CNE)	Horizontal sync input.
94	-----	-----	----------	Not used. Open.
95	-----	-----	SUB-PWM	
96	-----	-----	----------	

Pin No.	I/O	Active Level	Abbreviation	Function
97	O	(Pulse)	CRTN-CNE	Supplies pulses to IC1102 (DSP) to control the wipe fade operation.
98	I	(Pulse)	FOCS-SEN	Focus motor position detection input.
99	-----	(Pulse)	IRIS PWM	Iris motor drive output .
100	I	(Pulse)	ZOOM-SEN	Zoom motor position detection input.

2. System Control Microprocessor (IC901: S-μP)

Pin No.	I/O	Active Level	Abbreviation	Function
1	O	Lo	CH2. REC[Lo]	Output the signals to select the video heads for recording.
2	O	Lo	CH1. REC[Lo]	Go "Lo" in the corresponding channel period during recording.
3	O	Hi/Lo	EVF. ON	EVF power control output. Outputs "Hi" when power is turned on.
4	O	(Pulse)	SW25Hz	Head switching pulse output.
5	O	Hi/Lo	LCD. ON	LCD power control output. Outputs "Hi" when power is turned on.
6	O	Hi/Lo	VCR ON	Power control output. Outputs "Hi" when power is turned on.
7	O	Hi/Lo	PB	Output to control the mode of the video processor. Goes "Hi" during playback.
8	O	Hi	D-STANDBY	Cylinder motor start auxiliary output. Outputs "Hi" for 50 ms when the motor is started in the forward rotation direction.
9	O	(Pulse)	END LED	End LED drive output. Outputs pulses of approx. 50Hz when power is turned on.
10	I	0V-3V	M-SW2	Mechanism state switch position (mode) detection input.
11	I	0V-3V	M-SW1	
12	I	0V-3V	M-SW0	
13	I	Lo	CAM SW[Lo]	Power switch detection input. "Lo" is input during recording (camera mode).
14	I	Lo	VCR SW[Lo]	Power switch detection input. "Lo" is input during playback (VCR mode).
15	I	Lo	EJECT SW[Lo]	Eject switch detection input. When "Lo" is input, the camcorder performs the eject operation even when the power is turned off (standby release input).
16	I	Lo	STAGE[Lo]	Cassette holder open/close detection input. "Lo" is input when the cassette holder is closed.
17	I	Hi/Lo	ME/MP[Lo]	Input to discriminate the type of tape. Hi: ME (metal evaporated) tape, Lo: MP (metal particle) tape.
18	I	Lo	WAKE UP[Lo]	Standby release input. When the camera power is turned on, "Lo" is input to release the standby mode. IC901 detects the inputs of each switch to start operation.
19	I	Lo	REC START[Lo]	Recording start/stop switch detection input.
20	I	Hi/Lo	ADP/BATT[Lo]	Power supply detection input. Hi: AC adapter, Lo: Battery.
21	I	Hi	HIBAND	Playback mode detection input. IC901 receives the playback mode detection signal sensed by IC201 (VIDEO PROCESS) and instructs IC904 (CHARA. GEN.) to generate the display signals and also transfers the operation mode data to IC201. Open for models with which only normal tapes are used.
22	I	Hi	TEST PROG.	Test program start detection input. A test program is executed when "Hi" is input.
23	I	Hi/Lo	LCD OPEN[Lo]/ CLOSE	Input to siscriminate the state of LCD panel is opened or closed. Hi: Close, Lo: Open.
24	I	Lo	AV CONT	Input to detect whether an external AV signal is input or not. "Lo" is input when an AV input cable is connected to the AV input/output connector (JK200: AV IN/OUT).
25	O	Hi	MUTE	Audio muting output. Outputs "Hi" to mute sound.
26	O	Hi/Lo	CAM[Lo]/LINE	Video processor mode control output. Outputs "Lo" during camera recording and "Hi" with an external (line) signal.
27	O	Hi/Lo	S.EDIT	Table-top VCR mode control output. The operation mode of the VCR connected to JK200 (AV IN/OUT) is controlled remotely using the pause switch. "Hi" output sets the VCR to the pause mode and "Lo" output releases the pause mode (record mode).
28	O	Hi	TRICK	Controls the video processor operation mode. Outputs "Hi" during trick play.

Pin No.	I/O	Active Level	Abbreviation	Function
29	O	Lo	OSD RESET [Lo]	Outputs "Lo" with power on and is set to open with power off to initialize IC904 (CHARA. GEN.).
30	O	Lo	TRICK	Controls the LCD control circuit operation mode. Outputs "Hi" during trick play.
31	O	Hi	C.STANDBY	Capstan motor power control output.
32	O	Lo	SW+B(VCR ON) [Lo]	Power control output. Outputs "Lo" when power is turned off.
33	O	Hi/Lo	LCD NOR/ HI[Lo]	Output to select the LCD display mode.
34	O	Lo	CAM RESET [Lo]	Camera block power supply control output. Outputs "Hi" when power is turned on and "Lo" when power is turned off to initialize the camera block (IC1104: D-μP).
35	O	Hi/Lo	f4SEL	Auto track finding (ATF) pilot signal select output.
36	O	Hi/Lo	TRK. MOD	Output to select the pilot signal from IC601 (ATF). Hi: VCO output, Lo: Playback (PB) FM signal
37	-----	-----	GND	Grounded.
38	I	Lo	SYSTEM RESET[Lo]	Microprocessor reset input. "Lo" input resets the microprocessor.
39	-----	-----	GND	Grounded.
40	O	(Pulse)	XTAL OUT 12MHz	Drive X901 to generate 12MHz main clock pulses.
41	I	(Pulse)	EXTAL IN 12MHz	
42	I	(Pulse)	D-STB(DSP)	For data communications with IC1104 (D-μP).
43	I	(Pulse)	D-DATA(DSP)	
44	O	(Pulse)	S-DATA(DS)	
45	I	(Pulse)	D-CLOCK(DSP)	
46	I	0V-3V	MODEL	Internal mode select input. (Select the NTSC(USA)/NTSC(JAPAN)/PAL etc.)
47	I	0V-3V	VCR KEY2	VCR operation switch detection input (playback, date/title).
48	I	0V-3V	SHT. DET	Input to detect the short-circuits in the power circuit.
49	I	0V-3V	BATTERY	Input to detect the battery remaining level
50	-----	-----	GND	Grounded.
51	I	-----	AVref	Reference voltage input.
52	-----	-----	AVdd	5V power input.
53	I	0V-3V	HI8MP	Hi-8 MP tape detection input.
54	I	0V-3V	REC INH	Erase prevention tab detection input.
55	I	(Pulse)	PB PILOT	Playback pilot signal (PB PILOT) input.
56	I	0V-3V	VCR KEY1	VCR operation switch detection input (rewind, fast forward, stop).
57	I	0V-3V	TRACK ADJ.	For the connection of a tracking control for adjustment. When an ATF-R jig is connected to PG601 (test plug), the variable resistor on the ATF-R jig can be used as a tracking control.
58	I	(Pulse)	EST	Take-up tape end detection inputs.
59	I	(Pulse)	ESS	Supply tape end detection inputs.
60	I	(Pulse)	PB.ENV	Playback (PB) FM signal input.
61	I	(Pulse)	RSS	Supply/take-up reel sensor inputs. Used to calculate the remaining tape and to detect reel lock.
62	I	(Pulse)	RST	
63	I	Hi/Lo	LCD REVERSE [Lo]	LCD position detection input. Hi: Normal position, Lo: Reverse position.
64	I	(Pulse)	C.SYNC	Composite sync signal input. The separated vertical sync signal is divided by two to generate the 1/2V.SYNC pulse which is used tocontrol the cylinder speed during recording (reference signal).
65	I	(Pulse)	VCO IN	Receive the signal from the VCO in IC601 (ATF) to fix the frequency of the recording pilot signal (VCO's output).
82	O	(Pulse)	VCO CONT	
66	I	(Pulse)	DPG	Tach pulse input. Feedback signal that controls the recording phase of the cylinder.

Pin No.	I/O	Active Level	Abbreviation	Function
67	I	(Pulse)	DFG	Cylinder FG (CYL. FG) pulse input. Controls the cylinder speed during recording and playback.
68	I	(Pulse)	CFG	Capstan FG (CAPST.FG) pulse input. Used for recording restart control (assemble recording).
69	O	Hi	LOAD	Loading motor drive outputs.
70	O	Hi	UNLOAD	
71	O	(Pulse)	EVF-CS	Not used. Open.
72	O	(Pulse)	OSD-CS	Activates communications with IC904 (CHARA. GEN.).
73	O	PWM	D.SPEED	Cylinder servo control outputs.
74	O	PWM	C.SPEED	Capstan servo control outputs.
75	I	(Pulse)	CFG	Capstan FG (CAPST.FG) pulse input. Used for counting of the linear time counter (assemble recording).
76	I	Lo	V-DET[Lo]	Inputs whether a battery is attached or not. "Lo" is input when the battery is detached, to shift the microprocessor to the backup mode in which the data is saved.
77	I	Hi/Lo	BATT SERIAL	Not used.
78	O	(Pulse)	SSB DATA	For data communications with IC904 (CHARA. GEN.), IC201 (LUMA/CHROMA PROCESS) and IC401 (AUDIO PROCESS).
79	O	(Pulse)	SSB CLK	
80	I	Hi/Lo	HI8/NORMAL [Lo]	Internal mode select input (Hi: Hi-8 models, Lo: models used exclusively with normal tapes).
81	I	Hi/Lo	SANYO/PANA [Lo]	Maker of the battery detection input.
83	I	(Pulse)	REMOCON	Remote operation signal input from the infrared receiver.
84	I	(Pulse)	32MHz TEX IN	Generate 32kHz sub-clock pulses.
85	O	(Pulse)	32MHz TX OUT	
86	-----	-----	GND	Grounded.
87	-----	-----	VDD	3V power input.
88	-----	-----	----------	Not used. Connected to 5V power supply.
89	O	Hi	D.REVERSE	Cylinder motor reversing control output.
90	O	Hi	C.REVERSE	Capstan motor reversing control output
91	O	Hi	REC	Output to control the video processor during recording.
92	O	Hi	T.FADE	Rapid audio fading output. Outputs "Hi" when fading is started to fade the audio signal in rapidly, synchronized with the video signal.
93	O	Hi	FE CONT	Flying erase head oscillation control output
94	O	Lo	PR CONT	Preamp activation signal. Outputs"Hi" during playback to activate the preamp.
95	O	(Pulse)	HD	Artificial H. sync signal output.
96	O	(Pulse)	ADDV+SQ	Artificial V. sync signal + video muting signal output
97	O	(Pulse)	SW25Hz[Lo]	Inverted head switching pulse output
98	O	Hi/Lo	LCD-HOLD	Controls the LCD control circuit operation mode.
99	O	(Pulse)	AUDIO25	Outputs switching pulses to IC401 (AUDIO PROCESS).
100	O	Lo	----------	Not used.

CHAPTER 7 APPENDIX

SELF-DIAGNOSTIC FUNCTION

1. OVERVIEW

The camera/recorder has the following self-diagnostic function.

- Occasional defect self-diagnostic function (A mode)
- Mechanical block self-diagnostic function (B mode)

Fig. 1-1 shows the self-diagnostic coverage range.
The self-diagnostic functions of the camera/recorder are engaged by the system control (main) µP (IC0901) which detects, memorizes and displays data related to defects in the mechanical block control system.

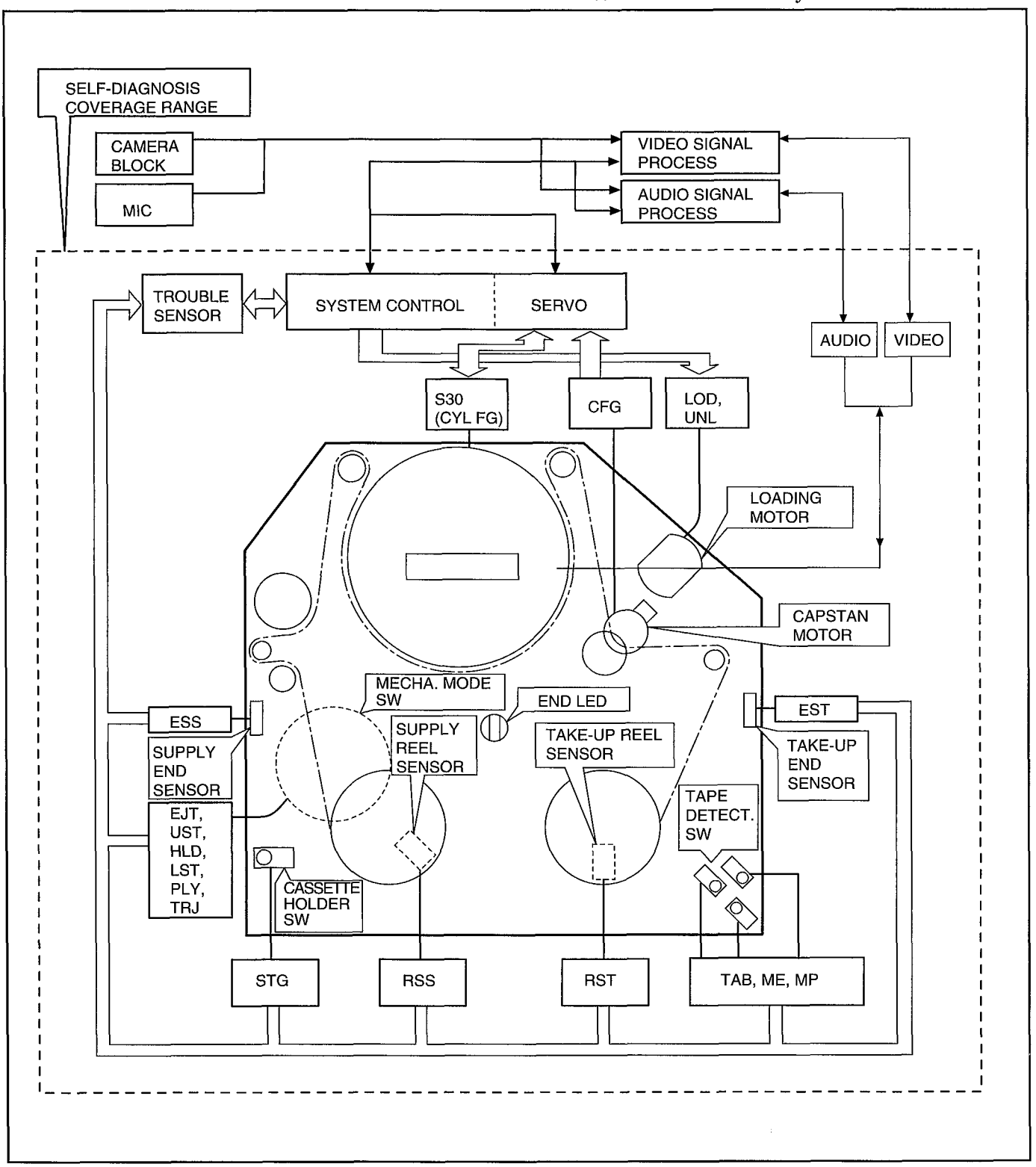


Fig. 1-1 Self-Diagnostic Coverage Range

2. DETAILS OF DISPLAY/DETECTION AND APPLICATIONS

Table 2-1 summarizes the details of display/detection of the self-diagnostic functions and their applications.
Fig. 2-1 shows the operational processes of the self-diagnostic functions.

Table 2-1 Details of Display/Detection of Self-Diagnostic Functions and their Applications

	Occasional defect self-diagnostic function (A mode)	**Mechanical block self-diagnostic function (B mode)**
Details of display/ detection	The system control μ P memorizes and displays the defect data. (If several defects have occurred, only the last defect detected is memorized.)	Displays the data for the defect that has occurred when the B mode is set.
Application	Used when the defective symptom is not reproduced during servicing.	Used to detect the cause of the defect (in the mechanical block or electrical circuits) and to determine the defective position of the mechanical block.
Detected parts	Trouble sensors · Take-up end sensor (EST) · Supply end sensor (ESS) · Take-up reel sensor (RST) · Supply reel sensor (RSS) Cylinder (S30) Capstan motor (CFG)	Trouble sensors · Take-up end sensor (EST) · Supply end sensor (ESS) · Take-up reel sensor (RST) · Supply reel sensor (RSS) Cylinder (S30) Capstan motor (CFG) Loading motor (LOD, UNL) Mechanism mode switch (EJT, UST, HLD, PLY, LST, TRJ) Tape detection switches, etc. · Erase prevention tab detection switch (TAB) · ME/MP detection switch (ME) · Hi-8 MP detection switch (MP) · Cassette holder switch (STG)
Cautions	When the rewind mode is entered, the defect data is erased.	Engage the B mode after completing the A mode. If the B mode is engaged first, the defect data may be erased.

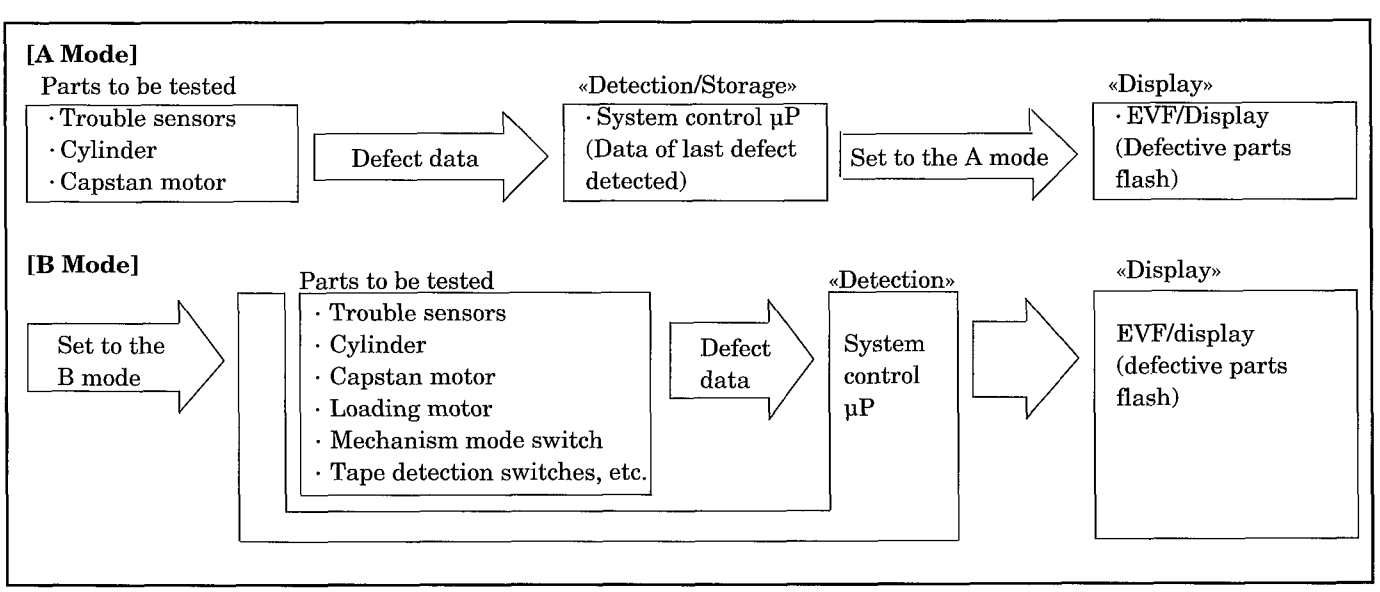


Fig. 2-1 Oeration Processes of Self-Diagnostic Functions

3. SETTING PROCEDURE AND DETAILS OF DIAGNOSIS

3.1 OCCASIONAL DEFECT SELF-DIAGNOSTIC FUNCTION (A MODE)

3.1.1 Setting Procedure

1) Connect (attach) a power supply (battery).

2) Set the power switch to"CAMERA" or "VIDEO".

3) Press the DATE button. [Within half a second]

4) Press the DATE and REW buttons simultaneously and hold them for 3-5 seconds.

```
××, × <××.××> 199×/××/××
      LOD        EJT        UNL
      RSS        UST        RST
      ESS        HLD        EST
      CGF        LST        S30
      TAB        PLY        STG
      ME         TRJ        MP
□        0 1 2 3 4 5 6 7 8 9 A B C D E F
0000   H: 0 0 0 0 0 0 0 0 0 2 0 0 1 0 0 0
       L: 1 1 0 1 1 1 1 8 0 1 0 0 B D 0 0
×××/×××    WYCCOAD  AUDD1 4 0
```

«Results of self-diagnosis»
- The shaded items flash if they are defective.
- See Table 3-1 for the results of diagnosis.

Cautions:
- Do not press any buttons other than those specified during self-diagnosis; otherwise, it may cause a malfunction.
- Only the shaded items are tested in the A mode.
- Other items are ignored.

[To release]
- Set the power switch to "OFF".
- Press the DATE and REW buttons simultaneously.

3.1.2 Results of Diagnosis

Table 3-1 summarizes the results of diagnosis and the circuits/parts deemed to be defective in the A mode.

Table 3-1 Details of A Mode Self-Diagnosis

Part	Display	Results of diagnosis	Parts/circuits deemed to be defective
Trouble sensors	RSS	The pulse from the supply reel sensor is defective.	· Supply reel disk · Trouble sensor (reel sensor) · IC0901
	RST	The pulse from the take-up reel sensor is defective.	· Take-up reel disk · Trouble sensor (reel sensor) · IC0901
	ESS	The pulse from the supply end sensor is defective.	· Trouble sensors (end sensor/end LED) · Q0905 · IC0901 · DC-DC converter circuit (B+ line)
	EST	The pulse from the take-up end sensor is defective.	· Trouble sensors (end sensor/end LED) · Q0905 · IC0901 · DC-DC converter circuit (B+ line)
Cylinder	S30	The SW25 (CYL. FG) pulse is defective.	· Cylinder · IC0631 · IC0901 · DC-DC converter circuit
Capstan	CFG	The CAPST. FG pulse is defective.	· Capstan motor · IC0631 · IC0901 · DC-DC converter circuit

3.2 MECHANICAL BLOCK SELF-DIAGNOSTIC FUNCTION (B MODE)

Caution: Complete the A mode before engaging the B mode.

3.2.1 Setting Procedure

1) Connect (attach) a power supply (battery).

2) Press the EJECT button to set to the eject state.

3) Press the "Hi-8 MP" switch on the trouble sensor and the DATE button and hold them, then set the power switch to "CAMERA" or "VIDEO" (Hold this state for a few seconds.) [Within 3 seconds].

4) Close the cassette lid.

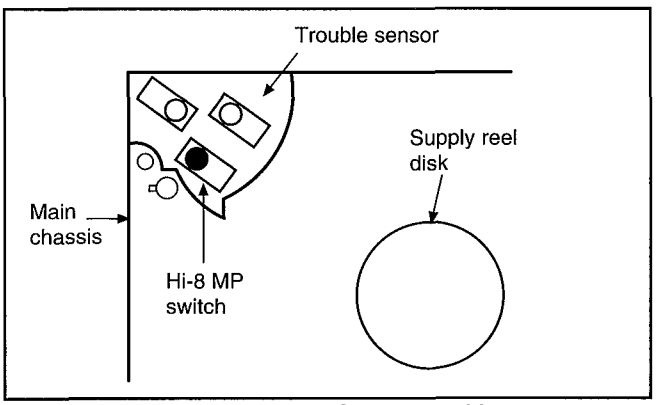
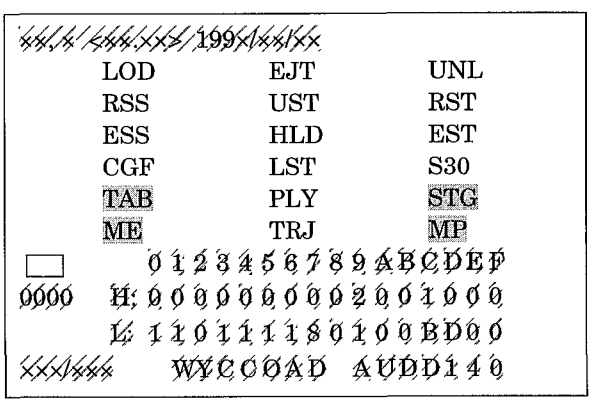


Fig.1-2 Hi-8 MP Switch Position



«Results of self-diagnosis»
- The defective items flash.
- The shaded items are the tape detection switches and cassette holder switch which flash when they are not pressed.
- See Table 3-2 for the results of diagnosis.

Cautions:
- Do not press any buttons other than those specified during self-diagnosis; otherwise, it may cause a malfunction.
- The indications in dotted lines are not covered by the self-diagnostic functions.
- It is normal for the diagnostic procedure to end in the eject state. Do not close the cassette lid thereafter.

[To release]
- Set the power switch to "OFF".

5) The procedure ends in the eject state.
Caution: Do not close the cassette lid.

3.2.2 Results of diagnosis

Table 3-2 summarizes the results of diagnosis and the circuits/parts deemed to be defective in the B mode.

Table 3-2 Results of B Mode Self-Diagnosis (1/2)

Part	Display	Results of diagnosis (Detect display conditions)	Parts/circuits deemed to be defective
Loading motor	LOD	The loading motor is defective when running forward. (Does not load within 10 seconds.)	· Loading motor · Rotation of drive gears in mechanical block faulty. · IC0671 · IC0901 · IC0902 · Power supply (5V, B+) lines.
	UND	The loading motor is defective when runnig in reverse. (Does not unload within 10 seconds.)	
Trouble sensors	RSS	The pulse from the supply reel sensor is defective. (There is one pulse or less withinte two seconds.)	· Supply reel disk · Trouble sensor (reel sensor) · Capstan motor · IC0901

Table 3-2 Results of B Mode Self-Diagnosis (2/2)

Part	Display	Results of diagnosis (Detect display conditions)	Parts/circuits deemed to be defective
Trouble sensor	RST	The pulse from the take-up reel sensor is defective. (There is one pulse or less within two seconds.)	· Take-up reel disk · Trouble sensor (reel sensor) · Capstan motor · IC0901
	ESS	The pulse from the supply end sensor is defective. (No pulse is input for more than 100 ms continuously within two seconds.)	· Trouble sensors (end sensor/end LED) · Q0905 · IC0901 · DC-DC converter circuit (B+ line)
	EST	The pulse from the take-up end sensor is defective. (No pulse is input for more than 100 ms continuously within two seconds.)	· Trouble sensors (end sensor/end LED) · Q0905 · IC0901 · DC-DC converter circuit (B+ line)
Tape detection switches, etc.	TAB	The erase prevention tab detection switch detects the record inhibit state (OFF).	**Caution**: These switches flash when they are not pressed. It is abnormal if they flash when pressed. · Trouble sensor · IC0901
	ME	The ME/MP tape detection switch detects the MP state (OFF).	
	MP	The Hi-8 MP tape detection switch detects the normal MP state (OFF).	
	STG	The cassette holder switch detects the state where the cassette holder is not lowered (OFF).	
Capstan motor	CFG	The CAPST. FG pulse is defective. (150 pulses or less within two seconds.)	· Capstan motor · IC0631 · IC0901 · DC-DC converter circuit
Cylinder	S30	The SW25 (CYL. FG) pulse is defective. (No pulse is input normally within two seconds.)	· Cylinder · IC0631 · IC0901 · DC-DC converter circuit
Mechanism mode switch	UST	The unloading stop position detection signal is defective.	**Caution**: The positions shown on the left are detected in the order described within 10 seconds. · Mechanism mode switch · Trouble sensor · IC0901 · Defective rotation/phase of drive gears in mechanical block. · Loading motor. · Tape transport components. · Guide roller rails · DC-DC converter circuit.
	HLD	The half loading position detection signal is defective.	
	LST	The loading stop position detection signal is defective.	
	PLY	The play position detection signal is defective.	
	TRJ	The transient position detection signal is defective.	
	EJT	The eject position detection signal is defective.	

Demonstration (Demo) Mode

This camera/recorder has a demonstration (demo) mode function.

1. SETTING THE DEMO MODE

The camera/recorder can be set to the demo mode following the procedure below:

1.1 SETTING CONDITIONS

1) Connect the AC adapter/charger or a fully charged battery pack.
2) Set the CAMERA/OFF/VCR switch to "OFF".
3) Do not insert a cassette.

1.2 SETTING PROCEDURE

Hold the PLAY button down and set the CAMERA/OFF/VCR switch to "CAMERA".

2. EXITING THE DEMO MODE

Perform either of the following to finish (release) the demo mode:

1) Disconnect the AC adapter/charger or battery.
2) Insert a cassette.
3) Set the CAMERA/OFF/VCR switch to "CAMERA".

3. OPERATION DURING THE DEMO MODE

Cautions:

1) The following buttons and switches cannot be used in the demo mode:
   · VCR system:
   PLAY, F.FWD, REW, REC START/STOP
   · Camera system:
   EIS, FADE, DIGITAL EFFECT, FOCUS, INST.ZOOM
2) If the AC input cable is connected while in the demo mode, the demo mode wi ll be interrupted, and the operation mode when the cable has been connected will be maintained.
3) When the CAMERA/OFF/VCR switch is set to "VCR" during the demo mode, the demo mode will be interrupted, and the operation mode when the switch has been changed will be maintained.

3.1 OPERATION SEQUENCE

The following table shows the operation sequence in the demo mode and the display in the EVY (LCD) and on the monitor screen.

Caution:

Only functions provided with specific models will be demonstrated. (T his section describes models provided with all functions of this series of camera/recorder.)

Order	Demo mode	On-screen display	Picture	Remarks
1		No display		Continues one second.
2		DIGITAL		Displays characters every half second.
3		DIGITAL DEMONSTRATION		DEMOSNTRATION is displayed under DIGITAL
4		No display		Continues half a second.
5		DEMO		Lights for a second, and then continues to flash.
6	EIS	EIS indicator and OFF at center	Shakes noticeably in the vertical direction.	For 3 seconds
7		EIS indicator	Shaking lessens.	For 3 seconds
8		EIS indicator and OFF at center	Shakes noticeably in the horizontal direction.	For 3 seconds
9		EIS indicator	Shaking lessens.	For 3 seconds
10	INST.ZOOM (Instant Zoom)	(DEMO flashes)		For 2 seconds
11		I.ZOOM indicator	INST. ZOOM is ON	For 2 seconds
12		(DEMO flashes)	INST. ZOOM is OFF	For 2 seconds
13		I.ZOOM indicator	INST. ZOOM is ON	For 2 seconds
14	FADE	White fade indicator	White fade in	The fade modes will switch sequences every demo mode cycle.
15			White fade out	
14'		Wipe fade indicator	Wipe fade in	
15'			Wipe fade out	
14'		Zoom fade indicator	Zoom fade in	
15'			Zoom fade out	
14'		Black-and-white (B&W) fade indicator	B/W fade in	
15'			B/W fade out	

Order	Demo mode	On-screen display	Picture	Remarks
16	16 × 9	16 × 9 indicator	16 × 9 picture	For 2 seconds
17	Negative/positive inversion	NEGPOS indicator	Negative picture	For 2 seconds
18	× 130 zoom	ZM:2 indicator	Magnifies subject up to 130 times.	For 2 seconds
19	Half mirror	MIRROR indicator	Half-mirror picture	For 2 seconds
20	Mosaic	MOSAIC indicator	Mosaic picture	For 2 seconds
21	Normal		Normal picture	For 3 seconds, and then goes back to step 1.

Note: Steps 1-21 will be repeated during the demo mode.

This describes only the differences from the "TH MECHANISM" service manual (No.6406E) issued previously.

DISASSEMBLY

2-1. Cassette holder (Fig.2-1)

1) Move the eject lever in the direction of arrow (A) and set the unit to the eject state.

Caution when reinstalling

· Reinstall the cassette holder so that section (B) of the eject lock slider is inserted into section (C) of the eject lock arm.

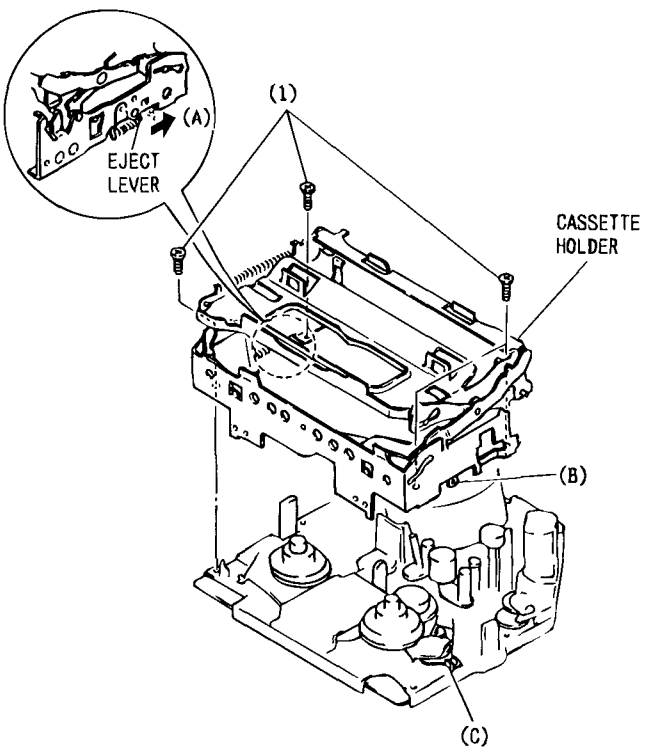


Fig. 2-1

2-3. Loading motor, loading gears (Fig.2-3)

1) Remove two screws (1) holding the loading motor.
2) Remove the loading motor and loading gears (1) and (2) from the chassis in the direction of arrow (A).

Adjustment after reinstalling

· After reinstalling the loading motor and loading gears ((1) and (2)), be sure to preform the following adjustment.
"3. PHASE MATCHING IN ASSEMBLY" in chapter 1.

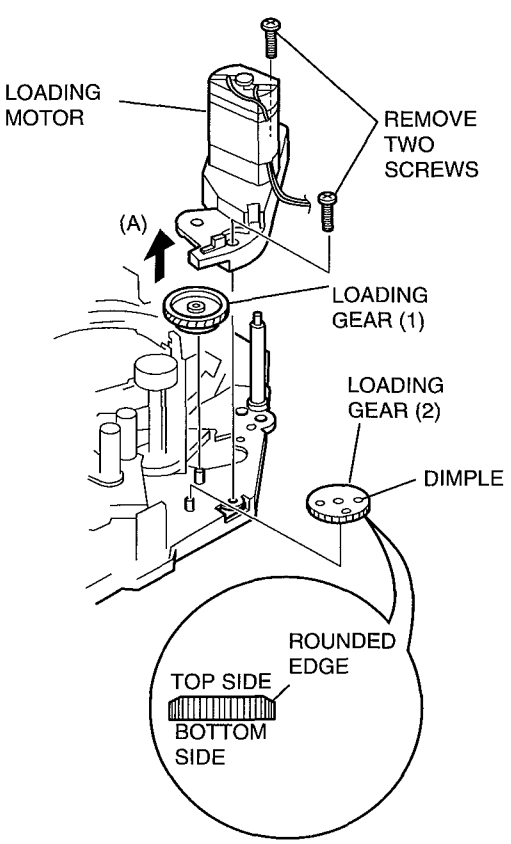


Fig. 2-3

2-12. Chassis plate, Take-up reel disk (Fig.2-13)

1) Remove screw (1) holding the chassis plate.
2) Remove the chassis plate from the chssis.
3) Pull out the take-up reel disk from the take-up reel disk shaft.

Caution when reinstalling

· When reinstalling the chassis plate, make sure the flange covers over the edges of the tension band.

2-13. Eject lock drive arm (Fig.2-13)

1) Remove the eject lock drive arm from the eject lock arm.

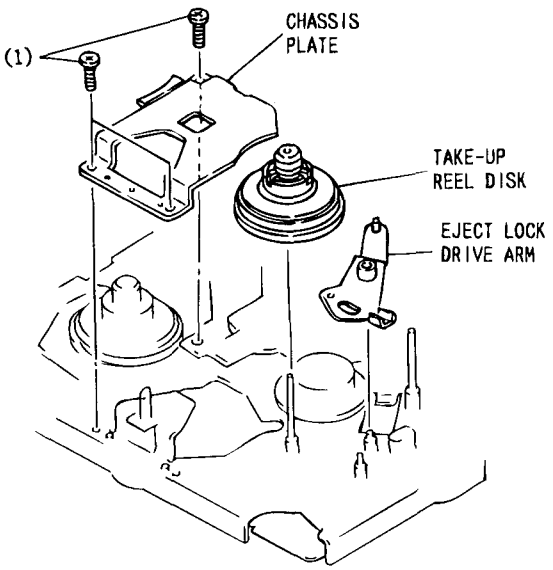


Fig. 2-13

3-2. Loading Gears and Loading Ring

(Figs. 3-2, 3-3)

Caution

· Be careful that the phase of the mechanism state switch which was matched in item 3-1 does not drift.

Procedure of phase matching in assembly

1) Align the markings of the loading ring and gears as shown in Fig. 3-2.

Caution: When reinstalling the pressure roller cam gear, set the eject lock drive arm to the position shown in Fig. 3-3 and check that pin (j) is inserted into groove (J) in the back of the pressure roller cam gear.

Advice: If it is difficult to see marking (D) on the lower loading ring, match the phase by the following procedure.

(1) Set the upper and lower loading rings to the state shown in Fig. 3-2. (Watch the guide roller fixing section.)

(2) Move the upper and lower loading rings so that holes (H) overlap each other.

(3) If holes (H) overlap each other, the phase of the loading ring is correct.

(4) If holes (K) overlap each other, the phase of the loading relay gear (4) is correct.

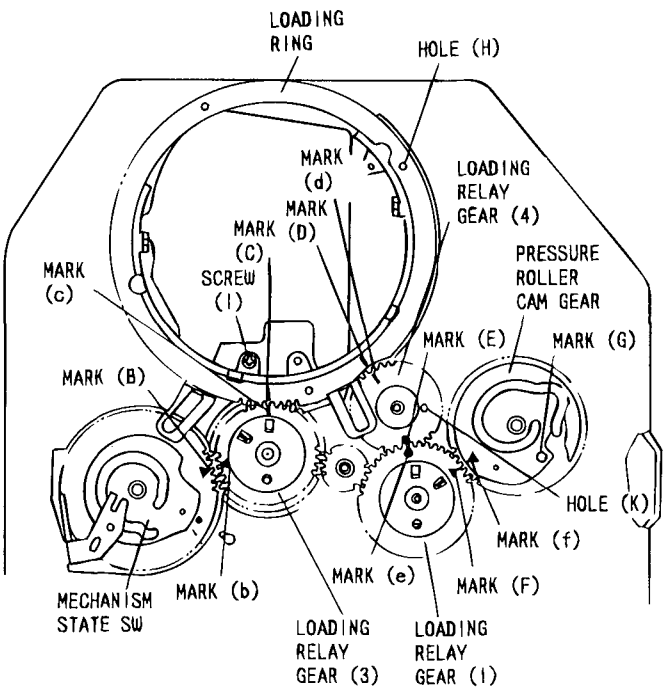


Fig. 3-2

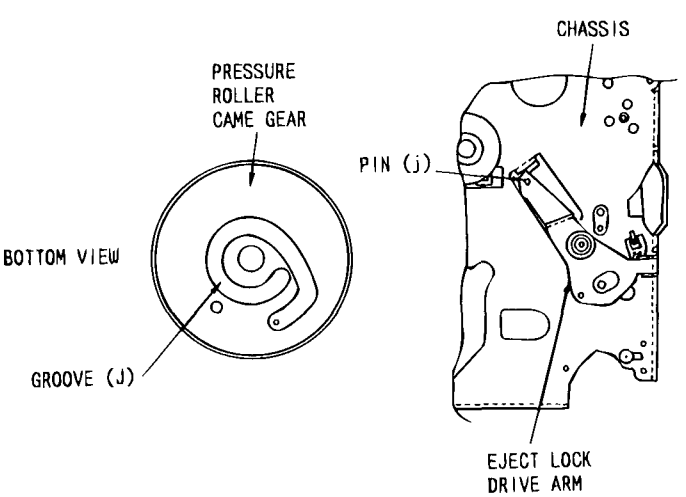


Fig. 3-3

4. PHOTOS OF MECHANISM

· Refer to these when reinstalling and perform phase matching in assembly.

4-1. Top View of Mechanism

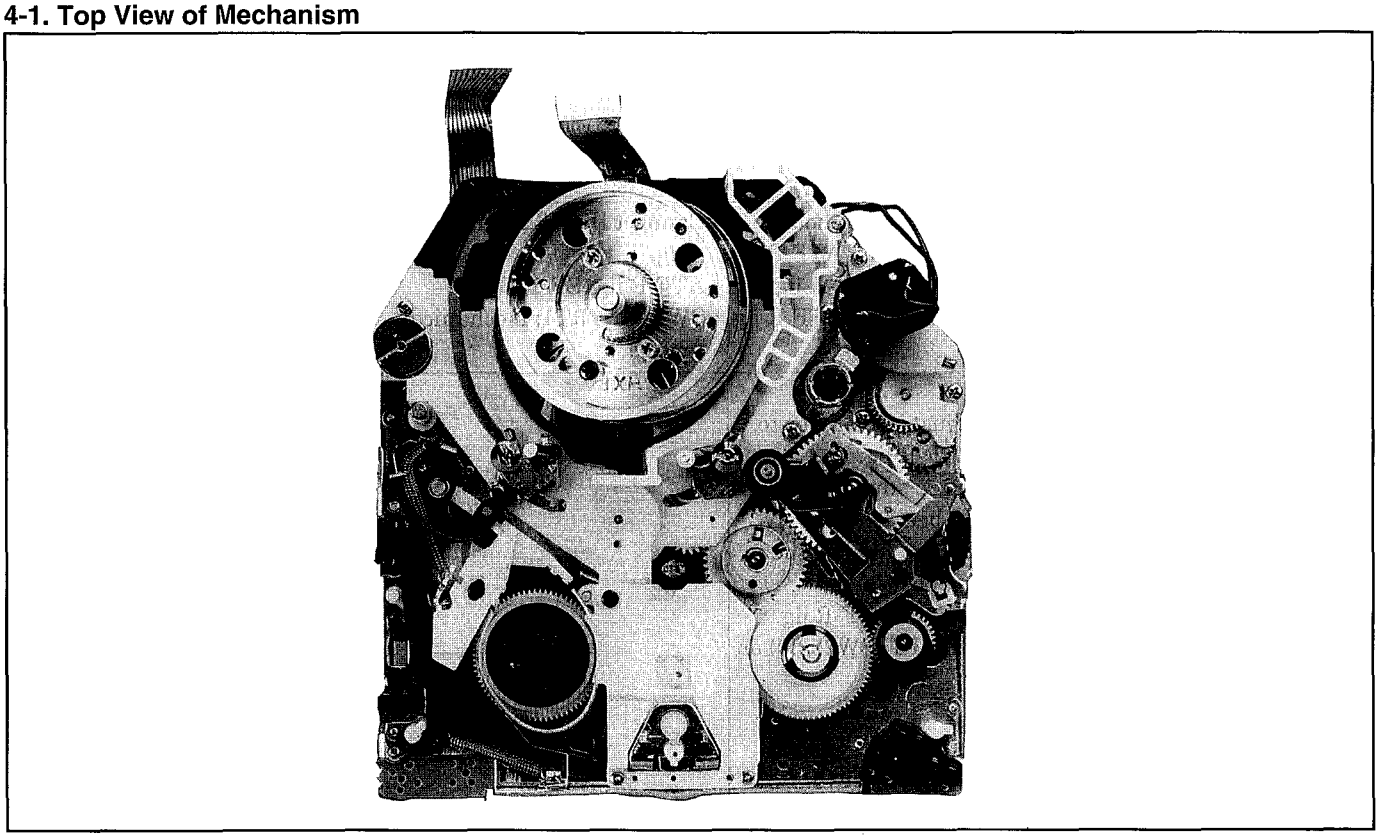


Fig. 4-1

4-2. Bottom View of Mechanism

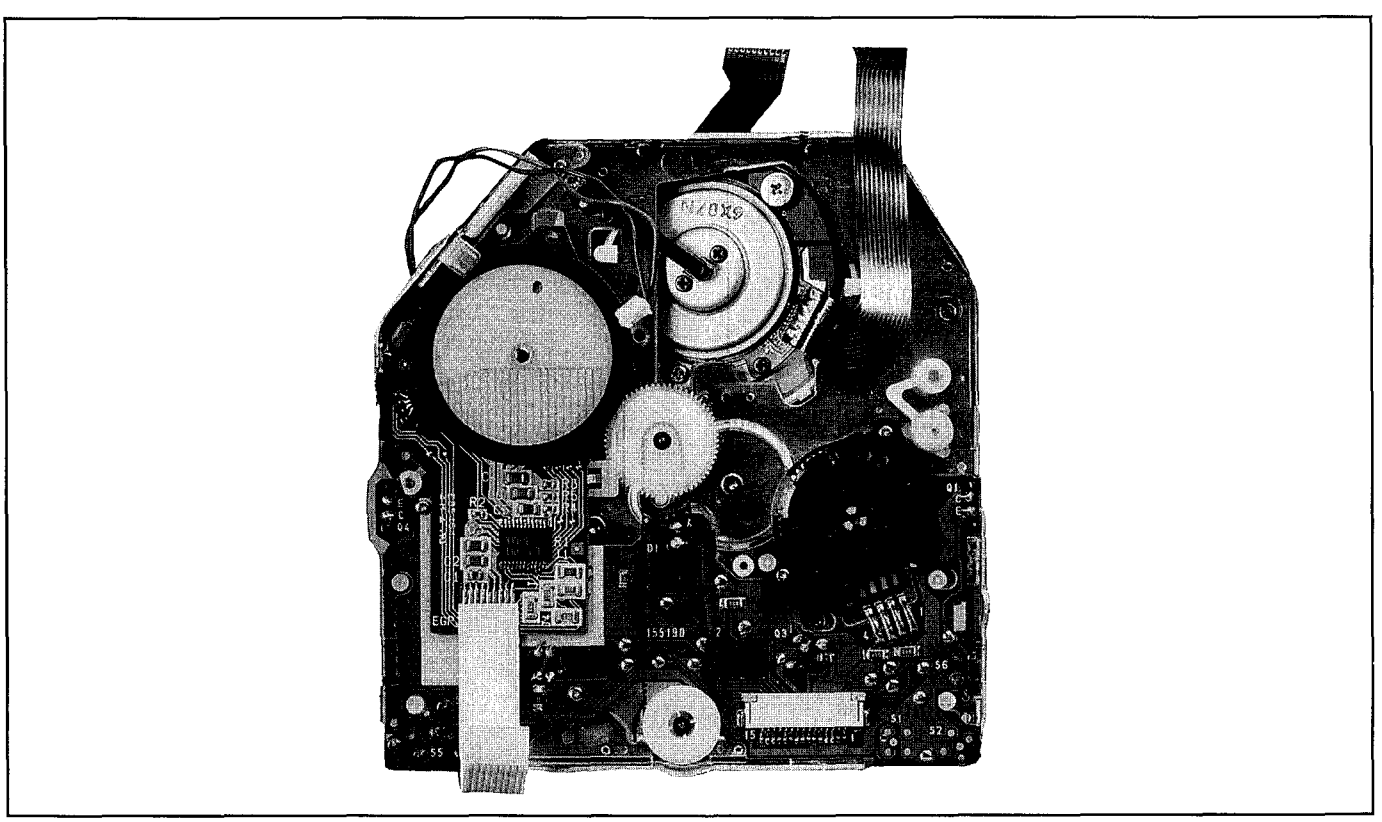


Fig. 4-2

MECHANISM ADJUSTMENT

3-3. Supply/Take-up Guide Roller Height Adjustment (Figs. 3-4, 3-5)

Caution

· Be sure to check this item after reinstalling the supply guide roller and take-up guide roller. Basically, the height of the supply/take-up guide rollers should not be adjusted. Adjust these heights only if they are abnormal.

Test equipment/jigs	Test equipment/jigs connection points	State of VCR	Adjustment point
· Alignment tape · Oscilloscope · ATF-R jig · Special driver	· Test Plug on Main board · TP1(SW25/30) on ATF-R jig · TP2(GND) on ATF-R jig · TP3(FM OUT) on ATF-R jig	· Connect the ATF-R jig to test plug. · ATF-R jig (SW1: OFF, SW3: ON, RT1: mechanical center)	· Top of guide rollers

Adjustment procedure

Caution: Before performing this adjustment, refer to Fig. 6-1 and modify the ATF-R jig. Connect the ATF-R jig before suppling power.

1) Load an alignment tape that has been completely rewound. Press the PLAY button and hold it, then set the POWER switch to VIDEO position.
2) Connect an oscilloscope to TP3 on the ATF-R jig.
3) Synchronize the oscilloscope with TP1 (SW25/30) on the ATF-R jig.
4) Set the osilloscope to (+) slope.

Supply Guide Roller (Fig. 3-4)

5) Press SW2 on the ATF-R jig and hold it, then perform the following steps.
6) Adjust the height of the supply guide roller so the waveform is flat.
7) Adjust the voltage level control of the oscilloscope so that portion (A) of the waveform is set to 4 graduations.
8) Set SW1 on the ATF-R jig to ON.
9) Turn RT1 on the ATF-R jig counterclockwise so the voltage at point (C) on the ATF-R jig is 1.8 ± 0.1V. Then check that point (B) of the waveform is set to 3 graduations.
10) Adjust the height of the supply guide roller so minimum amplitude of the waveform is set to NTSC:2.3 ± 0.3/PAL:2.5 ± 0.3 graduations.

Take-up Guide Roller (Fig. 3-5)

11) Set the oscilloscope to (-) slope.
12) Adjust the voltage level control of the oscilloscope so that portion (B) of the waveform is set to 4 graduarions.
13) Turn RT1 on the ATF-R jig counterclockwise so the voltage at point (C) on the ATF-R jig is 1.8 ± 0.1V. Then check that point (B) of the waveform is set to 3 graduations.
14) Adjust the height of the take-up guide roller so the minimum amplitude of the waveform is set to NTSC:2.5 ± 0.3/PAL:2.3 ± 0.3 graduations.

Caution: After adjustment is completed, be sure to reverse the modification to ATF-R jig.

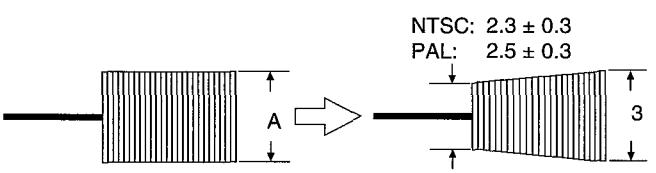


Fig. 3-4

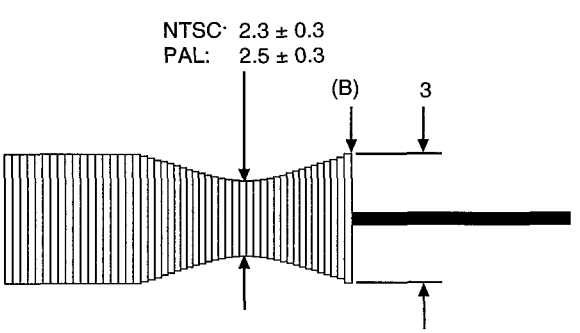


Fig. 3-5

4. ADJUSTMENT AFTER REPLACING THE CYLINDER (Figs. 4-1, 4-2)

When the cylinder is replaced, the height relative to the guide roller drifts, therefore the tape transport system and servo circuit should be adjusted. Check and adjust in the following order.

Test equipment/jigs	Test equipment/jigs connection points	State of VCR	Adjustment point
· Alignment tape · Oscilloscope · ATF-R jig · Special driver	· Test Plug on Main board · TP1(SW25/30) on ATF-R jig · TP2(GND) on ATF-R jig · TP3(FM OUT) on ATF-R jig	· Connect the ATF-R jig to test plug. · ATF-R jig (SW1: OFF, SW3: ON, RT1: mechanical center)	· Top of guide rollers

Adjustment procedure

Caution: Before performing this adjustment, refer to Fig. 6-1 and modify the ATF-R jig.

1) Load an alignment tape that has been completely rewound. Press the PLAY button and hold it, then set the POWER switch to the VIDEO position.
2) Connect an oscilloscope to TP3 on the ATF-R jig.
3) Syncronise the oscilloscope with TP1(SW25/30) on the ATF-R jig.
4) Set the oscilloscope to (+) slope.
5) Press SW2 on the ATF-R jig and hold it, then perform the following steps.
6) Adjust the voltage level control of the oscilloscope so that portion (A) of the waveform is set to 4 graduations.
7) Set SW1 on the ATF-R jig to ON.
8) Turn RT1 on the ATF-R jig counterclockwise so that portion (A) of the waveform is set to 3 graduations.
9) Adjust the height of the supply guide roller so the minimum amplitude of the waveform is set to NTSC:2.3 ± 0.3/PAL:2.5 ± 0.3 graduations. (See Fig. 4-1)
10) If this cannot be confirmed, adjust the height of the supply guide roller, referring to "3-3. Supply/ Take-up Guide Roller Height Adjustment".
11) Set the oscilloscope to (-) slope.
12) Turn RT1 on the ATF-R jig counterclockwise so the voltage at point (C) on the ATF-R jig is 1.8 ± 0.1V. Then check that point (B) of the waveform is set to 3 graduations.
13) Check that the minimum amplitude of the waveform is set to NTSC:2.3 ± 0.3/PAL:2.5 ± 0.3 graduations. (See Fig.4-2)
    If this cannot be confirmed, adjust the height of the take-up guide roller, referring to "3-3. Supply/ Take-up Guide Roller Height Adjustment".
14) Perform the following electrical adjustments.
    · Head switching point adjustment
    · Record luminance/chroma level adjustment

Caution: After adjustment is complete, be sure to reverse the modification to ATF-R jig.

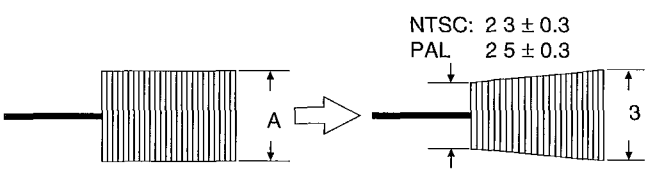


Fig. 4-1

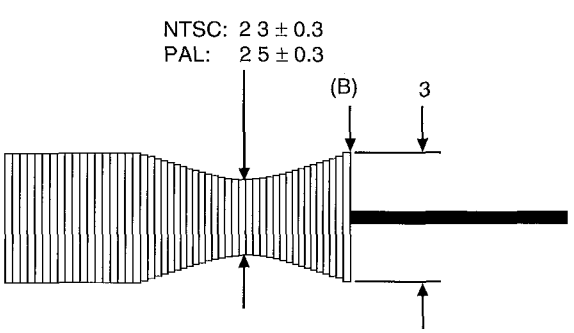


Fig. 4-2

5. CHECKING THE TORQUE

There are two types of cassette torque meter.
Choose the applicable one for the measurement to be performed.

Item	VCR mode	Measured reel disk	Torque value	Torque cassette used
Take-up torque	Playback	Take-up	7-13 g-cm	SRK-8T-212 SRK-8T-232
Rewind torque	Reverse search	Supply	25-37 g-cm	SRK-8T-232
Take-up brake torque	Reverse search to stop	Take-up	10 g-cm ro more	SRK-8T-212 SRK-8T-232
Slack removal torque	Unloading	Supply	25-37 g-cm	SRK-8T-232

6. MODIFICATION TO ATF-R JIG (Fig. 6-1)

Caution

The ATF-R jig must be modified for the following adjustments.
After completing these, be sure to reverse the modification.

- 3-3. Supply/Take-up Guide Roller Height Adjustment
- 4. ADJUSTMENT AFTER REPLACING THE CYLINDER

Procedure

1) Short terminal (A) of the resistor on the ATF-R jig and pin 1 (5V) of the connector.

Note: This modification makes SW2 on the ATF-R jig a PCM area observation switch.

Caution: Use a shorting clip, etc. to short the parts; this can be removed easily after adjustment is completed.
A modification is also necessary in the same way when the ATF jig is used.

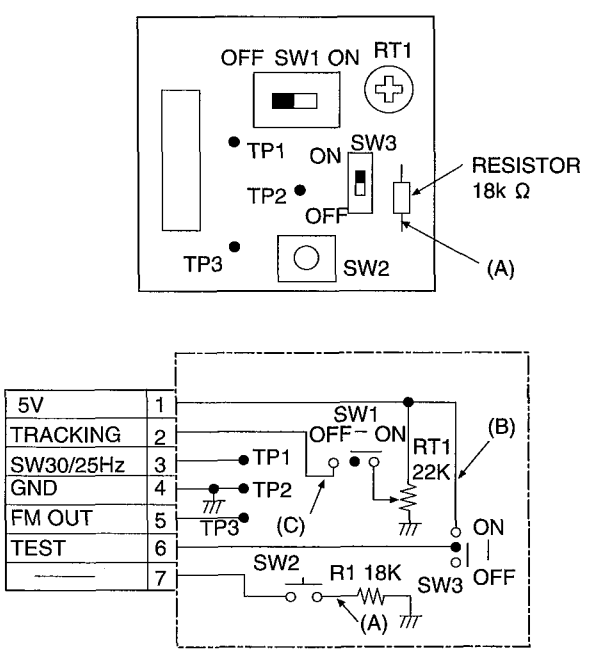


Fig. 6-1

Kapitel 7 Anhang

Selbstdiagnosefunktionen

1. Übersicht

Der Kamerarecorder weist die folgenden Selbstdiagnosefunktionen auf.

※ Selbstdiagnosefunktion für gelegentliche Defekte (A-Modus)

※ Selbstdiagnosefunktion für mechanischen Block (B-Modus)

Abb. 1-1 zeigt den Selbstdiagnosebereich. Die Selbstdiagnosefunktionen des Kamerarecorders werden vom Systemsteuerungs- (Haupt) µP (IC0901) durchgeführt, der die Daten hinsichtlich Defekte im Steuerungssystem des mechanischen Blocks feststellt, speichert und anzeigt.

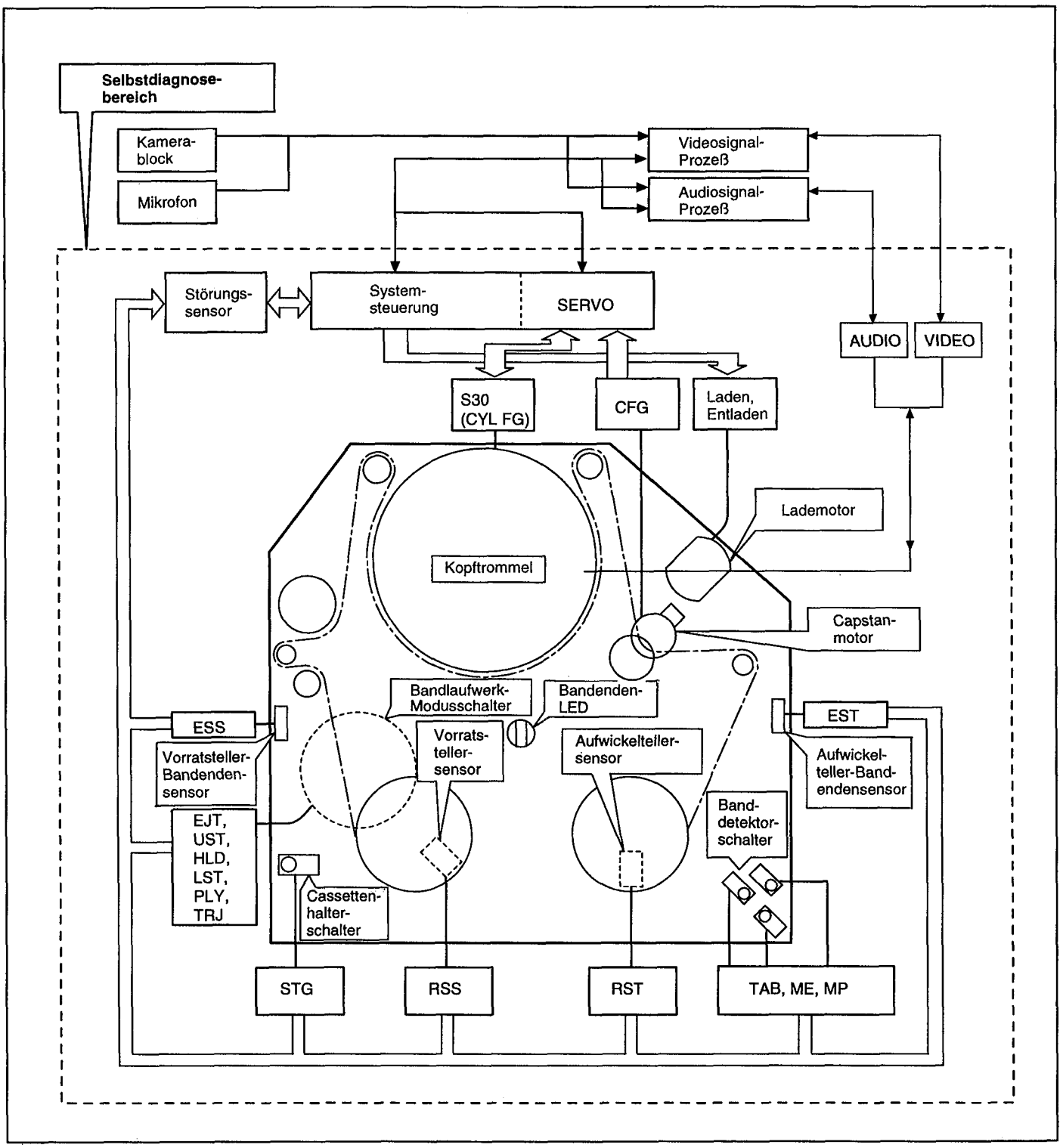


Abb. 1-1 Selbstdiagnosebereich

2. Einzelheiten von Display/Feststellung und Applikationen

Tabelle 2-1 faßt die Einzelheiten von Display/Feststellung der Selbstdiagnosefunktionen und ihrer Applikationen zusammen. Abb. 2-1 zeigt die Betriebsprozesse der Selbstdiagnosefunktionen.

Tabelle 2-1 Einzelheiten von Display/Feststellung der Selbstdiagnosefunktionen und ihrer Applikationen

	Selbstdiagnosefunktion für gelegentliche Defekte (A-Modus)	Selbstdiagnosefunktion für mechanischen Block (B-Modus)
Einzelheiten von Display/Feststellung	Der Systemsteuerungs-µP speichert und zeigt die Defektdaten an. (Falls mehrere Defekte aufgetreten sind, wird nur der zuletzt festgestellte Defekt abgespeichert.)	Zeigt die Daten für den Defekt an, der aufgetreten ist, wenn der B-Modus eingestellt war.
Applikation	Wird verwendet, wenn das Defektsymptom während der Wartung nicht wiederholt wird.	Wird verwendet, um die Ursache des Defekts (im mechanischen Block oder in den elektrischen Schaltkreisen) festzustellen und die defekte Position des mechanischen Blocks zu bestimmen.
Festgestellte Teile	Störungssensoren Aufwickelteller-Bandendensensor (EST) Vorratsteller-Bandendensensor (ESS) Aufwickeltellersensor (RST) Vorratstellersensor (RSS) Kopftrommel (S30) Capstanmotor (CFG)	Störungssensoren Aufwickelteller-Bandendensensor (EST) Vorratsteller-Bandendensensor (ESS) Aufwickeltellersensor (RST) Vorratstellersensor (RSS) Kopftrommel (S30) Capstanmotor (CFG) Lademotor (LOD, UNL) Bandlaufwerk-Modusschalter (EJT, UST, HLD, PLY, LST, TRJ) Banddetektorschalter usw. Detektorschalter für Löschschutzlamelle (TAB) ME/MP-Detektorschalter (ME) Hi-8 MP-Detektorschalter (MP) Cassettenhalterschalter (STG)
Vorsicht	※ Wenn der Schnellvorlauf- oder Rücklaufmodus aktiviert wird, werden die Defektdaten gelöscht.	Den B-Modus aufrufen, nachdem der A-Modus beendet ist. Falls der B-Modus zuerst aufgerufen wird, können die Defektdaten gelöscht werden.

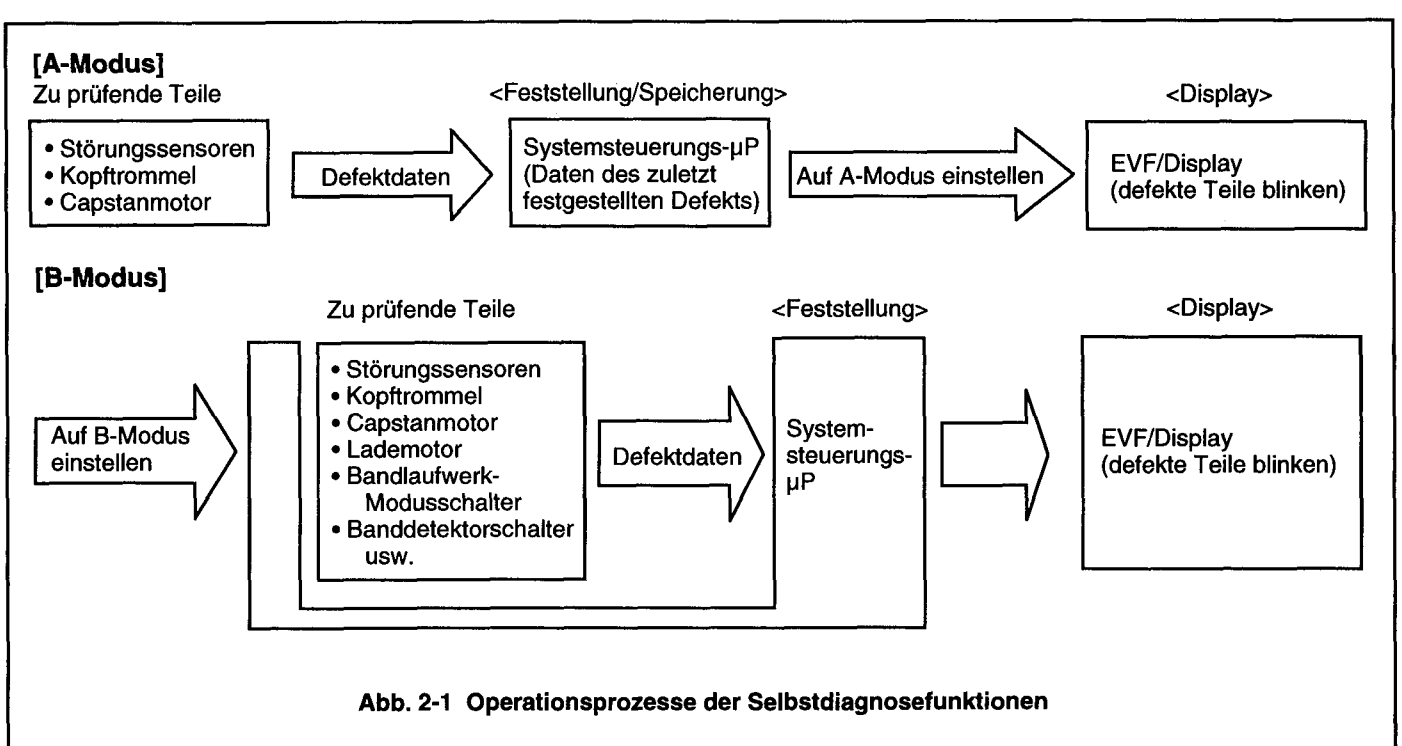


Abb. 2-1 Operationsprozesse der Selbstdiagnosefunktionen

3. Einstellvorgang und Einzelheiten der Diagnosen

3.1 Selbstdiagnosefunktion für gelegentliche Defekte (A-Modus)

(1) Einstellvorgang

1) Eine Stromversorgung (Batterie) anschließen anbringen).

2) Den Stromschalter auf "CAMERA" oder "VIDEO" stellen.

3) Die DATE-Taste drücken. [Innerhalb einer halben Sekunde]

4) Die DATE- und REW-Taste gleichzeitig betätigen und für 3 - 5 Sekunden gedrückt halten.

```
××, × <××.××> 199×/××/××
        LOD          EJT          UNL
        RSS          UST          RST
        ESS          HLD          EST
        CGF          LST          S30
        TAB          PLY          STG
        ME           TRJ          MP
□          0 1 2 3 4 5 6 7 8 9 A B C D E F
0000    H: 0 0 0 0 0 0 0 0 0 2 0 0 1 0 0 0
        L: 1 1 0 1 1 1 1 8 0 1 0 0 B D 0 0
×××/×××     WYCCOAD  AUDD1 4 0
```

<Ergebnisse der Selbstdiagnose>
* Die schattierten Posten blinken, wenn sie defekt sind.
* Für die Ergebnisse der Diagnose siehe Tabelle 3-1.

Vorsicht:
* Während der Selbstdiagnose nur die spezifizierten Tasten drücken; anderenfalls kann es zu einer Störung kommen.
* Nur die schattierten Posten werden im A-Modus geprüft. Die anderen Posten werden ignoriert.

[Zur Freigabe]
* Den Stromschalter auf "OFF" stellen.
* Die DATE- und REW-Tasten gleichzeitig drücken.

(2) Ergebnisse der Diagnose

Tabelle 3-1 fast die Ergebnisse der Diagnose und die im A-Modus als defekt befundenen Schaltkreise/Teile zusammen.

Teil	Display	Ergebnisse der Diagnose	Als defekt befundene Teile/Schaltkreise
Störungs-sensoren	RSS	Der Impuls vom Vorratstellersensor ist defekt.	* Vorratsteller * Störungssensor (Wickeltellersensor) * IC0901
	RST	Der Impuls vom Aufwickeltellersensor ist defekt.	* Aufwickelteller * Störungssensor (Wickeltellersensor) * IC0901
	ESS	Der Impuls vom Vorratsteller-Bandendensensor ist defekt.	* Störungssensoren (Bandendensensor/Bandenden-LED) * Q0905 * IC0901 * Gs/Gs-Konverterschaltkreis (B+ Leitung)
	EST	Der Impuls vom Aufwickelteller-Bandcendensensor ist defekt.	* Störungssensoren (Bandendensensor/Bandenden-LED) * Q0905 * IC0901 * Gs/Gs-Konverterschaltkreis (B+ Leitung)
Kopftrommel	S30	Der SW25 (CYL. FG) Impuls ist defekt.	* Kopftrommel * IC0631 * IC0901 * Gs/Gs-Konverterschaltkreis
Capstanmotor	CFG	Der CAPST. FG-Impuls ist defekt.	* Capstanmotor * IC0631 * IC0901 * Gs/Gs-Konverterschaltkreis

3.2 Selbstdiagnosefunktion für mechanischen Block (B-Modus)

Vorsicht: Den A-Modus beenden, bevor der B-Modus aufgerufen wird.

3.2.1 Einstellvorgang

1) Eine Stromversorgung (Batterie) anschließen (anbringen).

2) Die EJECT-Taste drücken, um den Auswurfstatus einzustellen.

3) Den "Hi8 MP"-Schalter am Störungssensor und die DATE-Taste betätigen und gedrückt halten; danach den Stromschalter auf "CAMERA" oder "VIDEO" stellen. (Diesen Status für einige Sekunden beibehalten.) [Innerhalb von 3 Sekunden]

4) Den Cassettenschachtdeckel schließen.

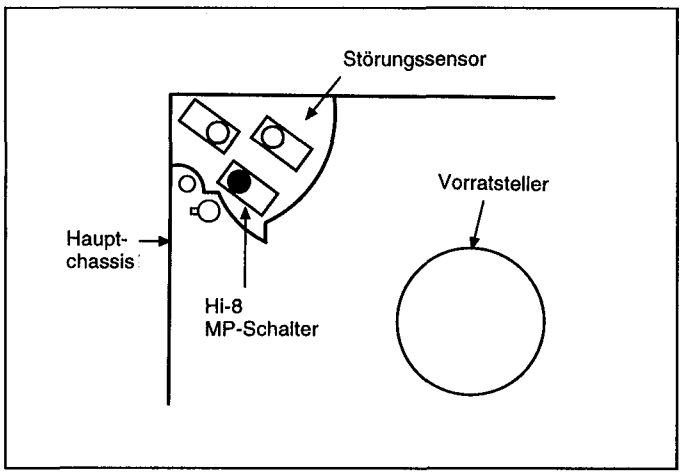
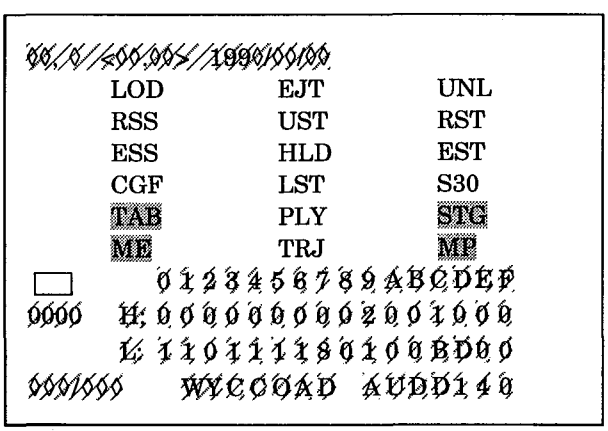


Abb. 1-2 Position des Hi-8 MP-Schalters



<Ergebnisse der Selbstdiagnose>
* Die defekten Posten blinken.
* Die schattierten Posten sind die Banddetektorschalter und der Cassettenhalterschalter, die blinken, wenn sie nicht gedrückt werden.
* Für die Ergebnisse der Diagnose siehe Tabelle 3-2.

Vorsicht:
* Während der Selbstdiagnose nur die spezifizierten Tasten drücken; anderenfalls kann es zu einer Störung kommen.
* Die mit gestrichten Linien umrandeten Anzeigen werden von den Selbstdiagnosefunktionen nicht erfaßt.
* Es ist normal, daß der Diagnosevorgang in dem Auswurfstatus endet. Danach den Cassettenschachtdeckel nicht schließen.

[Zur Freigabe]
* Den Stromschalter auf "OFF" stellen.

5) Der Vorgang endet im Auswurfmodus.

Vorsicht: Den Cassettenschachtdeckel nicht schließen.

3.2.2 Ergebnisse der Diagnose

Tabelle 3-2 faßt die Ergebnisse der Diagnose und die im B-Modus als defekt befundenen Schaltkreise/Teile zusammen.

Tabelle 3-2 Ergebnisse der Selbstdiagnose im B-Modus (1/2)

Teil	Display	Ergebnisse der Diagnose (Defektanzeigebedingungen)	Als defekt befundene Teile/Schaltkreise
Lademotor	LOD	Der Lademotor ist defekt, wenn er in Vorwärtsrichtung läuft. (Laden erfolgt nicht innerhalb von 10 Sekunden.)	* Lademotor * Rotation der Antriebsräder im mechanischen Block fehlerhaft * IC0671 * IC0901 * IC0902 * Stromversorgungs- (5V, B+) Leitungen
	UND	Der Lademotor ist defekt, wenn er in Rückwärtsrichtung läuft. (Das Entladen erfolgt nicht innerhalb von 10 Sekunden.)	
Störungssensoren	RSS	Der Impuls vom Vorratstellersensor ist defekt. (Während zwei Sekunden wird nur ein Impuls oder weniger ausgegeben.)	* Vorratsteller * Störungssensor (Wickeltellersensor) * Capstanmotor * IC0901
	RST	Der Impuls vom Aufwickeltellersensor ist defekt. (Während zwei Sekunden wird nur ein Impuls oder weniger ausgegeben.)	* Aufwickelterller * Störungssensor (Wickeltellersensor) * Capstanmotor * IC0901

Tabelle 3-2 Ergebnisse der Selbstdiagnose im B-Modus (2/2)

Teil	Display	Ergebnisse der Diagnose (Defektanzeigebedingungen)	Als defekt befundene Teile/Schaltkreise
Störungssensoren	ESS	Der Impuls vom Vorratsteller-Bandendensensor ist defekt. (Kein Impuls wird kontinuierlich für mehr als 100 ms innerhalb von zwei Sekunden eingegeben.)	* Störungssensoren (Bandendensensor/ Bandenden-LED) * Q0905 * IC0901 * Gs/Gs-Konverterschaltkreis (B+ Leitung)
	EST	Der Impuls vom Aufwickelteller-Bandendensensor ist defekt. (Kein Impuls wird kontinuierlich für mehr als 100 ms innerhalb von zwei Sekunden eingegeben.)	* Störungssensoren (Bandendensensor/ Bandenden-LED) * Q0905 * IC0901 * Gs/Gs-Konverterschaltkreis (B+ Leitung)
Banddetektorschalter usw.	TAB	Der Löschschutzlamellen-Detektorschalter stellt die Aufnahmesperre (OFF) fest.	Vorsicht: Diese Schalter blinken, wenn sie nicht gedrückt werden. Es ist abnormal, wenn sie blinken, wenn sie gedrückt werden. * Störungssensor * IC0901
	ME	Der ME/MP-Banddetektorschalter stellt den MP-Status (OFF) fest.	
	MP	Der Hi8 MP-Banddetektorschalter stellt den normalen MP-Status (OFF) fest.	
	STG	Der Cassettenhalterschalter stellt den Status fest, in dem der Cassettenhalter nicht abgesenkt ist (OFF).	
Capstanmotor	CFG	Der CAPST. FG-Impuls ist defekt. (150 Impulse oder weniger innerhalb von zwei Sekunden).	* Capstanmotor * IC0631 * IC0901 * Gs/Gs-Konverterschaltkreis
Kopftrommel	S30	Der SW25 (CYL. FG) Impuls ist defekt. (Kein Impuls wird normalerweise innerhalb von zwei Sekunden eingegeben.)	* Kopftrommel * IC0631 * IC0901 * Gs/Gs-Konverterschaltkreis
Bandlaufwerk-Modusschalter	UST	Das Entladestopposition-Detektorsignal ist defekt.	Vorsicht: Die links dargestellten Positionen werden in der beschriebenen Reihenfolge innerhalb von 10 Sekunden festgestellt. * Bandlaufwerk-Modusschalter * Störungssensor * IC0901 * Defekte Rotation/Phase der Antriebsräder im mechanischen Block * Lademotor * Bandtransportkomponenten * Führungsrollenschienen * Gs/Gs-Konverterschaltkreis
	HLD	Das Halbladepositions-Detektorsignal ist defekt.	
	LST	Das Ladestoppositions-Detektorsignal ist defekt.	
	PLY	Das Wiedergabepositions-Detektorsignal ist defekt.	
	TRJ	Das Übergangspositions-Detektorsignal ist defekt.	
	EJT	Das Auswurfspositions-Detektorsignal ist defekt.	

Demonstrations-Modus (Demo)

Dieser Video-Kamerarecorder ist mit einem Demonstrations-Modus (Demo) ausgerüstet.

1. Einstellung des Domo-Modus

Der Video-Kamerarecorder kann wie folgt auf den Demo-Modus eingestellt werden.

1.1 Einstellbedingungen

1) Das Netz-/Ladegerät oder einen vollständig aufgeladenen Akku anschließen.
2) Den CAMERA/OFF/VCR-Schalter auf "OFF" stellen.
3) Keine Cassette einsetzen.

1.2 Einstellvorgang

Die PLAY-Taste niederhaltern und den CAMERA/OFF/VCR-Schalter auf "CAMERA" stellen.

2. Verlassen des Demo-Modus

Einen der folgenden Vorgänge ausführen, um den Demo-Modus freizugeben:

1) Das Netz-/Ladegerät oder den Akku abtrennen.
2) Eine Cassette einsetzen.
3) Den CAMERA/OFF/VCR-Schalter auf "CAMERA" stellen.

3. Betrieb während des Demo-Modus

Vorsicht:

1) Die folgenden Tasten und Schalter können in dem Demo-Modus nicht verwendet werden:
   - Videorecorder-System:
     PALY, F.FWD, REW, REC START/STOP
   - Kamera-System:
     EIS, FADE, DIGITAL EFFECT, FOCUS, INST.ZOOM
2) Wenn das Wechselstromkabel während des Demo-Modus angeschlossen wird, wird der Demo-Modus unterbrochen, wogegen der Betriebsmodus, in dem das Kabel angeschlossen wurde, erhalten bleibt.
3) Wenn der CAMERA/OFF/VCR-Schalter während des Demo-Modus auf "VCR" gestellt wird, wird der Demo-Modus unterbrochen, wogegen der Betriebsmodus, in dem der Schalter umgeschaltet wurde, erhalten bleibt.

3.1 Betriebssequenz

Die nachfolgende Tabelle zeigt die Betriebssequenz in dem Demo-Modus sowie die anzeige im elektronischen Sucher (LCD) und auf dem Monitor-Bildschirm.

Vorsicht:

Nur die in dem einschlägigen Modell enthaltenen Funktionen werden im Demo-Modus angezeigt. (Dieser Abschnitt beschreibt die Modelle mit allen Funktionen dieser Serie von Video-Kamerarecordern.)

Reihenfolge	Demo-Modus	Bilschirmanzeige	Bild	Bemerkungen
1		Keine Anzeige		Dauert eine Sekunde.
2		DIGITAL		Zeigt die Zeichen jede halbe Sekunde an.
3		DIGITAL		DEMONSTRATION wird unter
4		DEMONSTRATION Keine Anzeige		DIGITAL angezeigt. Dauert eine halbe Sekunde.
5		DEMO		Leuchtet für eine Sekunde und blinkt danach.
6	EIS	EIS-Anzeige und OFF in Mitte	Beachtliches Zittern in vertikaler Richtung.	Für 3 Sekunden
7		EIS-Anzeige	Zittern läßt nach.	Für 3 Sekunden
8		EIS-Anzeige und OFF in Mitte	Beachtliches Zittern in horizontaler Richtung.	Für 3 Sekunden
9		EIS-Anzeige	Zittern läßt nach.	Für 3 Sekunden
10	INST.ZOOM (Instant Zoom)	(DEMO blinkt)		Für 2 Sekunden
11		I.ZOOM-Anzeige	INST.ZOOM ist eingeschaltet	Für 2 Sekunden
12		(DEMO blinkt)	INST.ZOOM ist ausgeschaltet	Für 2 Sekunden
13		I.ZOOM-Anzeige	INST.ZOOM ist eingeschaltet	Für 2 Sekunden
14	FADE	Weiß-Fade-Anzeige	Weiß-Einblendung	Die Fade-Modi ändern die Sequenz in jedem Zyklus des Demo-Modus.
15			Weiß-Auisblendung	
14'		Wipe-Fade-Anzeige	Wipe-Einblendung	
15'			Wipe-Ausblendung	
14'		Zoom-Fade-Anzeige	Zoom-Einblendung	
15'			Zoom-Ausblendung	
14'		Schwarzweiß-Fade-Anzeige	Schwarzweiß-Einblendung	
15'			Schwarzweiß-Ausblendung	

Reihenfolge	Demo-Modus	Bilschirmanzeige	Bild	Bemerkungen
16	16 x 9	16 x 9 Anzeige	16 x 9 Bild	Für 2 Sekunden
17	Negativ/Posi-tiv-Umkehr	NEGPOS-Anzeige	Negatives Bild	Für 2 Sekunden
18	x 130 Zoom	ZM:2 Anzeige	Vergrößerung des Objektes um das 130fache.	Für 2 Sekunden
19	Halbspiegel	MIRROR-Anzeige	Halbspiegel-Bild	Für 2 Sekunden
20	Mosaik	MOSAIC-Anzeige	Mosaik-Bild	Für 2 Sekunden
21	Normal		Normales Bild	Für 3 Sekunden und danach Rückkehr an Schritt 1.
Hinweis: Die Schritte 1-21 werden während des Demo-Modus wiederholt.				

TH-Bandlaufwerk

Hier sind nur die Unterschiede gegenüber der früher veröffentlichten Anleitung für das "TH-Bandlaufwerk" (Nr. 6406G) beschrieben.

Demontage

2-1 Cassettenhalter (Abb. 2-1)

1) Den Auswurfhebel in Richtung des Pfeiles (A) schieben und die Einheit in den Auswurfstatus eingreift.

Vorsicht beim Einbau

- Den Cassettenhalter so einbauen, daß der Abschnitt (B) des Auswurf-Verriegelungsgleitstücks in den Abschnitt (C) des Auswurfverriegelungsarms eingrift.

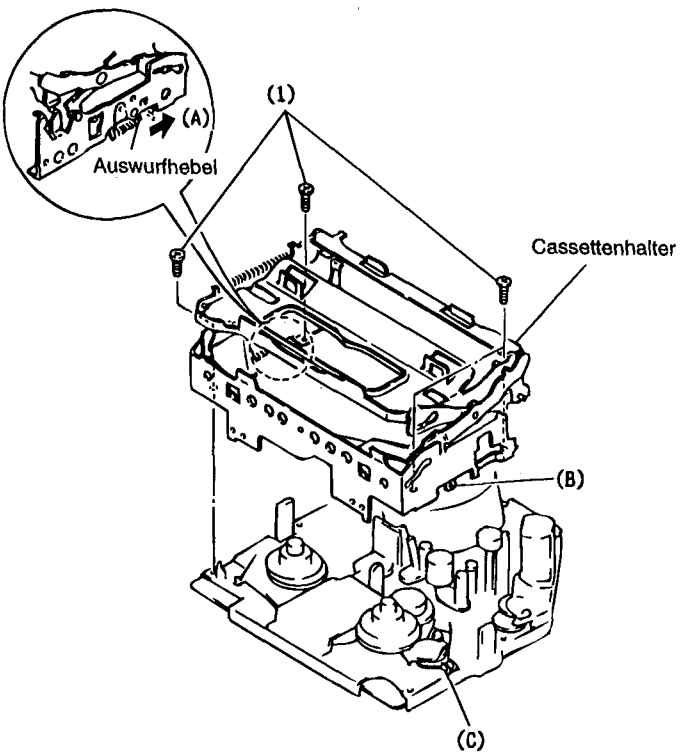


Abb. 2-1

2.3 Lademotor, Ladezahnräder (Abb. 2-3)

1) Zwei Schrauben (1) entfernen, mit welchen der Lademotor befestigt ist.
2) Den Lademotor und die Ladezahnräder (1) und (2) in Richtung des Pfeiles (A) aus dem Chassis entfernen.

Einstellung nach dem Wiedereinbau

- Nach dem Wiedereinbau des Lademotors und der Ladezahnräder (1) und (2), unbedingt die folgende Einstellung ausführen.
  "3. Phasenanpassung im eingebauten Zustand" in Kapitel 1.

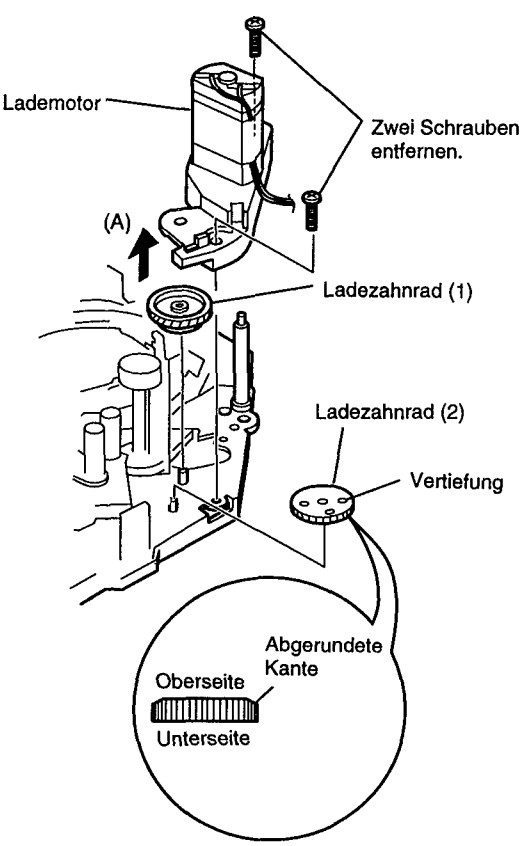


Abb. 2-3

2-12 Chassisplatte, Aufwickelteller (Abb. 2-13)

1) Die Schraube (1) entfernen, mit der die Chassisplatte befestigt ist.
2) Die Chassisplatte von dem Chassis abnehmen.
3) Den Aufwickelteller von der Aufwickeltellerwelle abziehen.

Vorsicht beim Einbau

- Beim Einbau der Chassisplatte darauf achten, daß der Flansch über die Kanten des Spannbandes reicht.

2-13 Auswurfverriegelungs-Antriebsarm (Abb. 2-13)

1) Den Auswurfverriegelungs-Antriebsarm von dem Auswurfverriegelungsearm abnehmen.

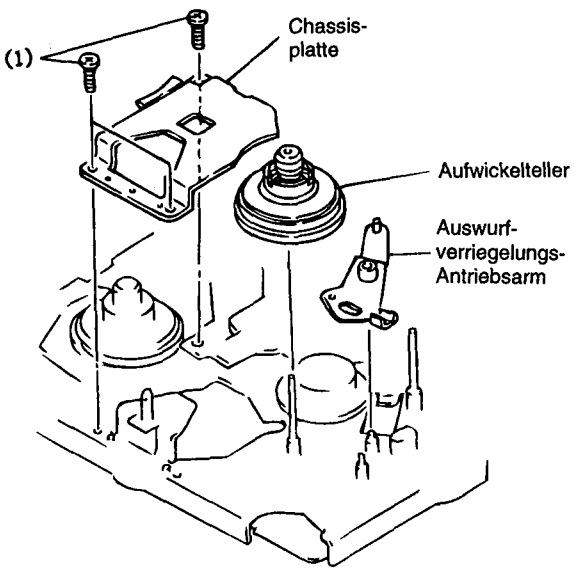


Abb. 2-13

3-2 Ladezahnräder und Ladering (Abb. 3-2, 3-3)

Vorsicht

- Darauf achten, daß die in Abschnitt 3-1 angepaßte Phase des Bandlaufwerk-Statusschalters nicht verstellt wird.

Vorgang für die Phasenanpassung

1) Die Markierungen an dem Ladering und an den Zahnrädern gemäß Abb. 3-2 ausrichten.

Vorsicht: Wenn das Andruckrollen-Nockenzahnrad wieder eingebaut wird, den Auswurfverriegelungsarm auf die in Abb. 3-3 gezeigte Position stellen und kontrollieren, daß der Stift (j) in die Nut (J) an der Rückseite des Andruckrollen-Nockenzahnrades eingesetzt ist.

Empfehlung: Falls die Markierung (D) auf dem unteren Ladering nur schwer gesehen werden kann, die Phase wie folgt anpassen.

(1) Den oberen und den unteren Ladering in den in Abb. 3-2 gezeigten Status stellen. (Den Führungsrollen-Befestigungsabschnitt beachten.)

(2) Den oberen und unteren Ladering so bewegen, daß sich die Bohrungen (H) überlappen.

(3) Falls sich die Bohrungen (H) überlappen, ist die Phase des Laderinges richtig eingestellt.

(4) Falls sich die Bohrungen (K) überlappen, ist die Phase des Laderelais-Zahnrades (4) richtig eingestellt.

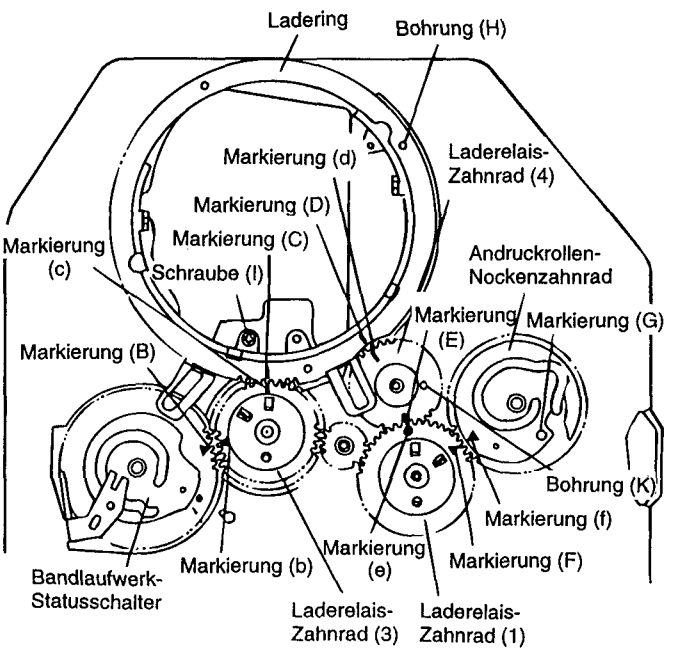


Abb. 3-2

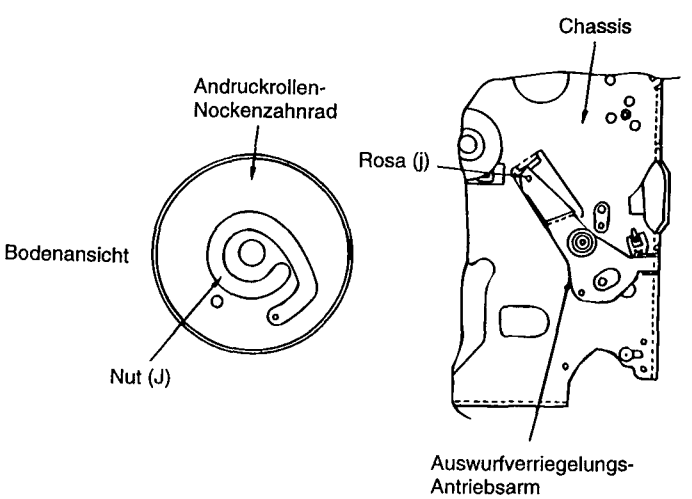


Abb. 3-3

4. Fotos des Bandlaufwerks

Diese Fotos beim Wiedereinbau und bei der Ausführung der Phasenanpassung in der Einheit beachten.

4.1 Draufsicht des Bandlaufwerks

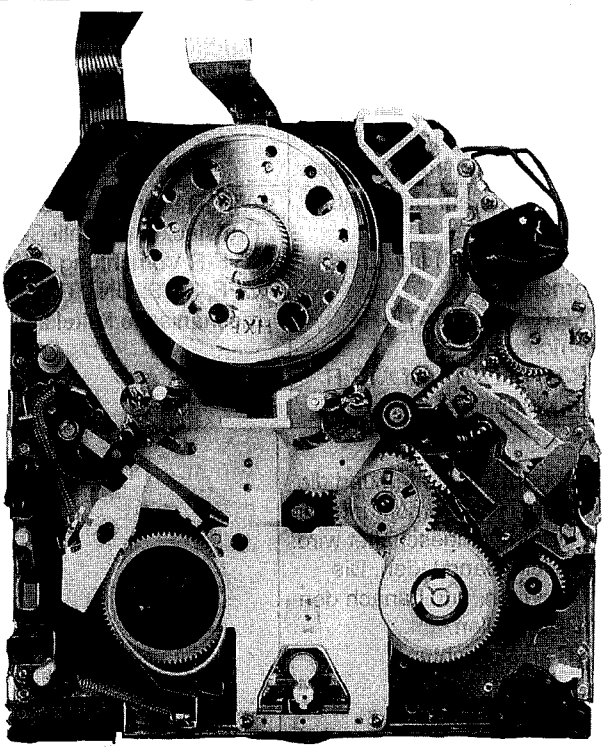


Abb. 4-1

4.2 Bodenansicht des Bandlaufwerks

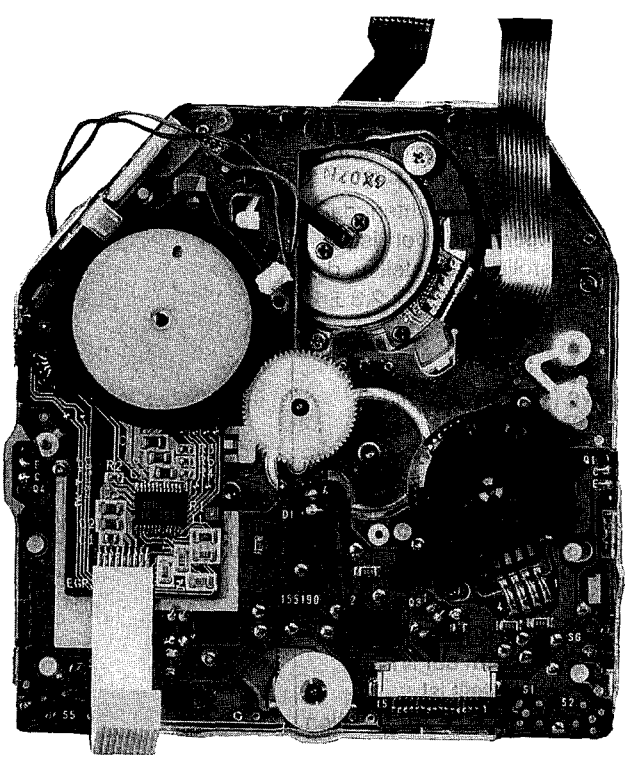


Abb. 4-2

Einstellung des Bandlaufwerks

3-3 Vorratsteller/Aufwickelteller-Führungsrollenhöhe (Fig. 3-4, 3-5)

Vorsicht

- Unbedingt diesen Punkt prüfen, nachdem die Vorratsteller-Führungsrolle und die Aufwickelteller-Führungsrolle wieder eingebaut werden.
  Grundlegend sollte die Höhe der Vorratsteller/Aufwickelteller-Führungsrollen nicht eingestellt werden. Diese Höhen nur einstellen, wenn diese nicht normal sind.

Prüfeinrichtung/ Vorrichtungen	Anschlußpunkte für Prüfeinrichtung/Vorrichtungen	Status des Videorecorders	Einstellpunkte
• Abgleichband • Oszilloskop • ATF-R Vorrichtung • Spezial-Schraubendreher	• Prüfstecker auf Hauptleiterplatte • TP1 (SW25/30) auf ATF-R Vorrichtung • TP2 (GND) auf ATF-R Vorrichtung • TP3 (FM OUT) auf ATF-R Vorrichtung	• ATF-R Vorrichtung an Prüfstecker anschließen. • ATF-R Vorrichtung (SW1: OFF, SW3: ON, RT1: mechanische Mittelstellung)	• Oberseite der Führungsrollen

Einstellvorgang

Vorsicht: Vor dieser Einstellung die Abb. 5-1 beachten und die ATF-R Vorrichtung modifizieren. Die ATF-R Vorrichtung anschließen, bevor die Stromversorgung eingeschaltet wird.

1) Das vollständig zurückgespulte Abgleichband laden. Die PLAY Taste betätigen und gedrück halten, und danach den POWER Schalter auf Position VIDEO stellen.
2) Ein Oszilloskop an TP3 auf der ATF-R Vorrichtung anschließen.
3) Das Oszilloskop mit TP1 (SW25/30) auf der ATF-R Vorrichtung synchronisieren.
4) Das Oszilloskop auf positive (+) Flankensteilheit einstellen.

◆ Vorratsteller-Führungsrolle (Abb. 3-4)

5) SW2 auf der ATF-R Vorrichtung betätigen und gedrückt halten; danach die folgenden Schritte ausführen.
6) Die Höhe der Vorratsteller-Führungsrolle so einstellen, daß die Wellenform linear verläuft.
7) Den Spannungspegelregler des Oszilloskops so einstellen, daß der Abschnitt (A) der Wellenform 4 Teilungen beträgt.
8) Den SW1 auf der ATF-R Vorrichtung auf ON stellen.
9) RT1 auf der ATF-R Vorrichtung gegen den Uhrzeigersinn drehen, so daß die Spannung an Punkt (C) der ATF-R Vorrichtung 1,8 ±0,1 V beträgt. Danach darauf achten, daß Punkt (B) der Wellenform auf 3 Teilungen eingestellt ist.
10) Die Höhe der Vorratsteller-Führungsrolle so einstellen, daß die minimale Amplitude der Wellenform auf NTSC: 2,3 ± 0,3/PAL: 2,5 ± 0,3 Teilungen eingestellt ist.

◆ Aufwickelteller-Führungsrolle (Abb. 3-5)

11) Das Oszilloskop auf eine negative (–) Flankensteilheit einstellen.
12) Den Spannungspegelregler des Oszilloskops so einstellen, daß der Abschnitt (B) der Wellenform 4 Teilungen beträgt.
13) RT1 auf der ATF-R Vorrichtung gegen den Uhrzeigersinn drehen, so daß die Spannung an Punkt (C) der ATF-R Vorrichtung 1,8 ±0,1 V beträgt. Danach darauf achten, daß Punkt (B) der Wellenform auf 3 Teilungen eingestellt ist.
14) Die Höhe der Aufwickelteller-Führungsrolle so einstellen, daß die minimale Amplitude der Wellenform auf NTSC: 2,5 ± 0,3/PAL: 2,3 ± 0,3 Teilungen eingestellt ist.

Achtung: Nachdem die Einstellung beendet ist, die Modifikation an der ATF-R Vorrichtung wieder freigeben.

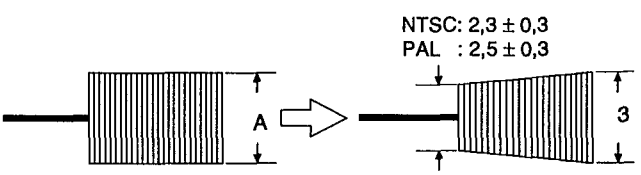


Abb. 3-4

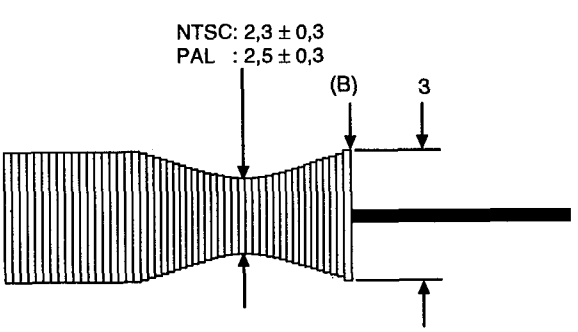


Abb. 3-5

4. Einstellung nach dem Austausch der Kopftrommel (Abb. 4-1, 4-2)

Wenn die Kopftrommel ausgetauscht wurde, wird die Höhe gegenüber der Führungsrolle verstellt, so daß das Bandtransportsystem und der Servo-Schaltkreis eingestellt werden sollen. Die Prüfung und Einstellung in der folgenden Reihenfolge durchführen.

Prüfeinrichtung/ Vorrichtungen	Anschlußpunkte für Prüfeinrichtung/Vorrichtungen	Status des Videorecorders	Einstellpunkte
• Abgleichband • Oszilloskop • ATF-R Vorrichtung • Spezial-Schraubendreher	• Prüfstecker auf Hauptleiterplatte • TP1 (SW25/30) auf ATF-R Vorrichtung • TP2 (GND) auf ATF-R Vorrichtung • TP3 (FM OUT) auf ATF-R Vorrichtung	• ATF-R Vorrichtung an Prüfstecker anschließen. • ATF-R Vorrichtung (SW1: OFF, SW3: ON, RT1: mechanische Mittelstellung)	• Oberseite der Führungsrollen

● Einstellvorgang

Vorsicht: Bevor diese Einstellung durchgeführt wird, Abb. 5-1 beachten und die ATF-R Vorrichtung modifizieren. Die ATF-R Vorrichtung anschließen, bevor die Stromversorgung eingeschaltet wird.

1) Ein vollständig zurückgespultes Abgleichband laden. Die PLAY Tasten betätigen und gedrückt halten, und danach den POWER Schalter auf Position VIDEO stellen.
2) Ein Oszilloskop an TP3 auf der ATF-R Vorrichtung anschließen.
3) Das Oszilloskop mit TP1 (SW25/30) auf der ATF-R Vorrichtung synchronisieren.
4) Das Oszilloskop auf positive (+) Flankensteilheit einstellen.
5) Den SW2 auf der ATF-R Vorrichtung betätigen und gedrückt halten; danach die folgenden Schritte ausführen.
6) Den Spannungspegelregler des Oszilloskops so einstellen, daß der Abschnitt (A) der Wellenform 4 Teilungen beträgt.
7) Den SW1 auf der ATF-R Vorrichtung auf ON stellen.
8) RT1 an der ATF-R Vorrichtung gegen den Uhrzeigersinn drehen, so daß der Abschnitt (A) der Wellenform 3 Teilungen beträgt.
9) Die Höhe der Vorratsteller-Führungsrolle so einstellen, daß die minimale Amplitude der Wellenform auf NTSC: 2,3 ± 0,3/ PAL: 2,5 ±0,3 Teilungen eingestellt ist (siehe Abb. 4-1).
10) Falls dies nicht bestätigt werden kann, die Höhe der Aufwickelteller-Führungsrolle gemäß "3-3 Einstellung der Vorratsteller/Aufwickelteller-Führungsrollenhöhe" einstellen.
11) Das Oszilloskop auf negative (–) Flankensteilheit einstellen.
12) RT1 auf der ATF-R Vorrichtung gegen den Uhrzeigersinn drehen, so daß die Spannung an Punkt (C) der ATF-R Vorrichtung 1,8 ±0,1 V beträgt. Danach darauf achten, daß Punkt (B) der Wellenform auf 3 Teilungen eingestellt ist.
13) Darauf achten, daß der minimale Amplitude der Wellenform auf NTSC: 2,3 ± 0,3/PAL: 2,3 ± 0,3 Teilungen eingestellt ist (siehe Abb. 4-2).
    Falls dies nicht bestätigt werden kann, die Höhe der Vorratsteller-Führungsrolle gemäß "3-3 Einstellung der Vorratsteller/Aufwickelteller-Führungsrollenhöhe" einstellen.
14) Die folgenden elektrischen Einstellungen vornehmen.
    • Kopfwechselpunkt
    • Aufnahmepegel

Vorsicht: Nachdem die Einstellung beendet ist, unbedingt die Modifikation an der ATF-R Vorrichtung wieder freigeben.

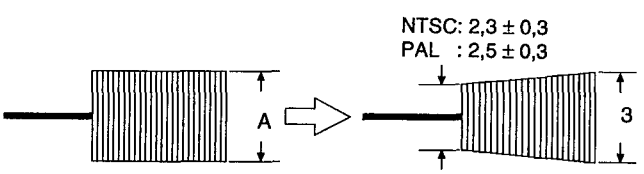


Abb. 4-1

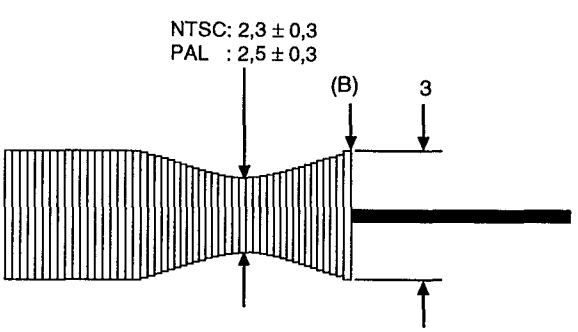


Abb. 4-2

5. Prüfung der Drehmomente

Zwei Arten von Cassetten-Drehmomentmesser stehen zur Verfügung. Verwenden Sie den geeigneten Drehmomentmesser für die jeweilige Messung.

Benennung	Videorecorder-Modus	Meßteller	Drehmoment	Verwendeter Cassetten-Drehmomentmesser
Aufwickelmoment	Wiedergabe	Aufwickelteller	7 - 13 gcm	SRK-8T-212, SRK-8T-232
Rückspulmoment	Suchlauf rückwärts	Vorratsteller	25 - 37 gcm	SRK-8T-232
Aufwickelteller-Bremsmoment	Suchlauf rückwärts auf Stopp	Aufwickelteller	10 gcm oder mehr	SRK-8T-212, SRK-8T-232
Bandspannmoment	Entladen	Vorratsteller	25 - 37 gcm	SRK-8T-232

6. Modifikation der ATF-R Vorrichtung (Abb. 5-1)

Vorsicht: Die ATF-R Vorrichtung darf nur für die folgenden Einstellungen modifiziert werden. Nach Beendigung dieser Einstellungen, unbedingt die Modifikation wieder freigeben.

- 3-3 Einstellung der Vorratsteller/Aufwickelteller-Führungsrollenhöhe
- 4. Einstellung nach dem Austausch der Kopftrommel

● Vorgang

1) Klemme (A) des Widerstands auf der ATF-R Vorrichtung und Stift 1 (5 V) des Steckers kurzschließen.

Hinweis: Diese Modifikation macht den SW2 auf der ATF-R Vorrichtung zu einem PCM-Bereich-Beobachtungsschalter.

Vorsicht: Eine Kurzschlußklammer usw. verwenden, um diese Teile kurzzuschließen, so daß der Kurzschluß nach der Einstellung wieder leicht behoben werden kann. Eine Modifikation auf gleicher Weise ist auch erforderlich, wenn die ATF Vorrichtung verwendet wird.

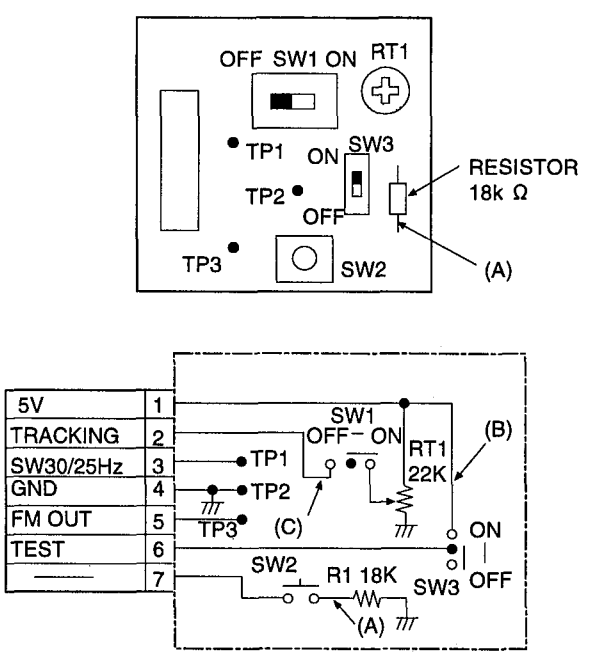
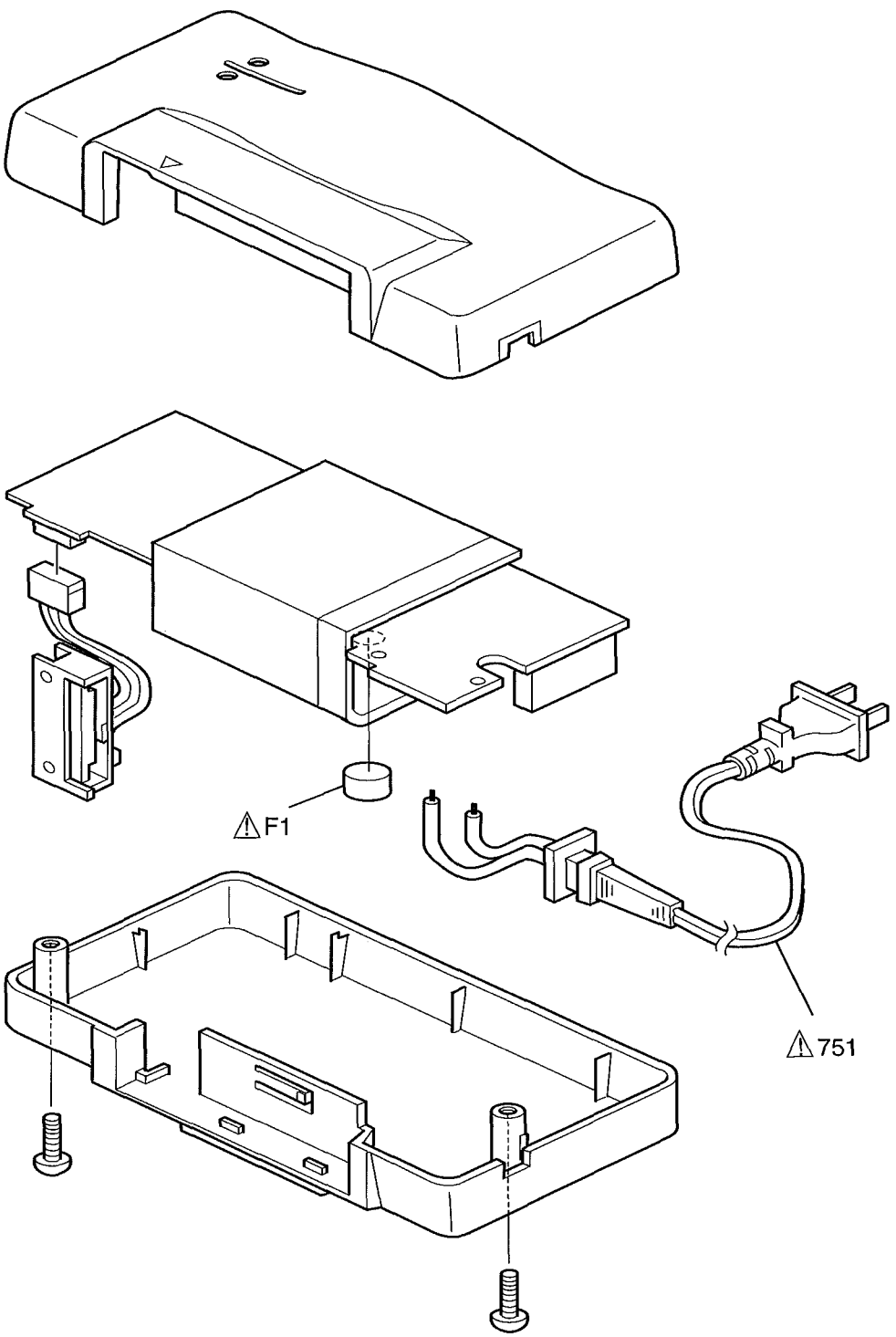


Abb. 5-1

EXPLODED VIEW & REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION
⚠ 751	EV10441	CORD, POWER (Except for UK, AU)
⚠ 751	EV10451	CORD, POWER (For UK)
⚠ 751	EV10461	CORD, POWER (For AU)
⚠ F1	4115881	FUSE 1.6A



HITACHI

HITACHI LTD. TOKYO JAPAN
International Sales Division,
THE HITACHI ATAGO BLDG.
No. 15 -12 Nishi-Shinbashi, 2 - Chome,
Minato-Ku, Tokyo 105, Japan
Tel. Tokyo 3 32581111

HITACHI SALES EUROPA GmbH
Am Seestern 18,
40547 Düsseldorf,
Germany
Tel. 0211 5291 50

HITACHI SALES (HELLAS) S.A.
91, Falirou Street, 117-41 Athens,
Greece
Tel. 92 42-620-4

HITACHI HOME ELECTRONICS (EUROPE) Ltd.
Hitachi House, Station Road, Hayes,
Middlesex UB3 4DR,
England
Tel. 0181 849 2000

HITACHI SALES IBERICA, S.A.
Gran Via Carlos Tercero.101,1 -1
Barcelona 08028
Tel. 3- 330.86.52

HITACHI FRANCE (RADIO-T.V.-ELECTRO-MENAGER) S.A.
4, allée des Sorbiers,
Parc d'active de Chêne,
69671 BRON Cedex,
France
Tel. 72 14-29-70

HITACHI HOME ELECTRONICS NORDIC
Domnarvsgatan 29 Lunda, Box 62
S-163 91 Spanga,
Sweden
Tel. 08 621 8250

Scan & PDF-Design: Schaltungsdienst
Lange oHG
Verlag technische Druckschriften

Zehrensdorfer Straße 11
D-12277 Berlin

http://www.schaltungsdienst.com